SHARP

OPERATION MANUAL
(for printer)

LASER PRINTER

Be sure to become thoroughly familiar with this manual to gain the maximum benefit from the product.

Before installing this product, be sure to read the installation requirements and cautions sections of the "Operation manual (for general information and copier operation)".

Be sure to keep all operation manuals handy for reference including this manual, the "Operation manual (for general information and copier operation)" and operation manuals for any optional equipment which has been installed.

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CHAPTER 1

BASIC PRINTING PROCEDURES

This chapter explains how to configure printer driver settings at your computer, and provides basic information on printing.

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SETTING THE PRINTER DRIVER

This section describes the method of changing the printer driver settings from your computer. If you have not yet installed the printer driver, read the accompanying "SOFTWARE SETUP GUIDE (for printer)" and install the printer driver from the CD-ROM.

Printer driver settings in Windows (selecting and setting print conditions)

Change the settings using the printer properties.

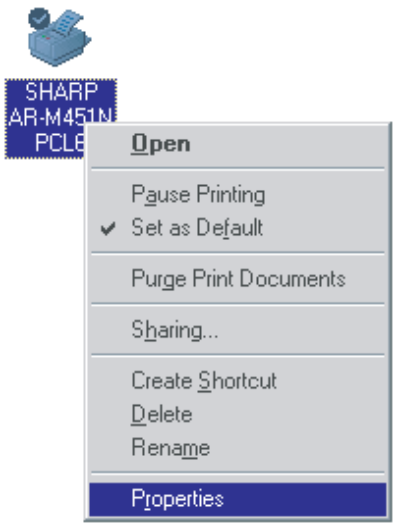
■ Windows 95/98/Me

The procedure for adjusting the settings in Windows Me is explained in the following.

1 On the [Start] menu, select [Settings] and then [Printers].

2 Right-click the installed printer driver and select [Properties] in the pop-up menu. Click the [Setup] tab in the printer driver properties.

The SHARP AR-M451N PCL6 properties is shown as an example.



3 Set each item.

For setting items, see the printer driver help. For information on viewing Help, see the following page 1-3. An example of always using the document filing function is explained on page 1-3.

4 Click the [OK] button.

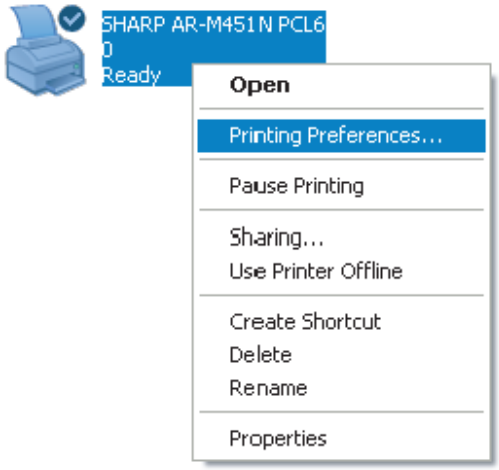
■ Windows NT4.0 / 2000 / XP / Server 2003

The procedure for adjusting the settings in Windows XP is explained in the following.

1 Select [Printers and Faxes] from the [Start] menu.

2 Right-click the installed printer driver and select [Printing Preferences].

The screen shows the example of selecting SHARP AR-M451N PCL6.



3 Set each item.

For setting items, see the printer driver help. For information on viewing Help, see the following page 1-3. An example of always using the document filing function is explained on page 1-3.

4 Click the [OK] button.

NOTE

To configure settings for installed peripheral devices such as a saddle stitch finisher, finisher, and large capacity tray, right-click the printer driver, select [Properties], and select the [Configuration] tab. (In Windows 95/98/Me, select [Properties] and then the [Configuration] tab in the [Setup] tab.) If the machine is being used as a network printer, click the [Auto Configuration] button in the [Configuration] tab to automatically set the peripheral device configuration. To display the latest tray information (paper size, paper type, and paper remaining), click the [Tray Status] button in the [Paper] tab.

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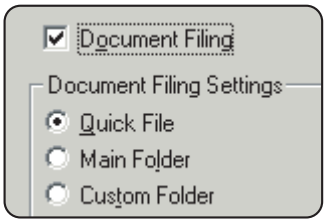
■ Selecting document filing

The procedure for always using the document filing function is explained below as an example. This setting is selected in the [Job Handling] tab of the printer driver window.

1 **Follow steps 1 and 2 on page 1-2.**

2 **Click the [Job Handling] tab.**

3 **Select the [Document Filing] checkbox.**



4 **Enter a user name and a job name in the "Job ID" field.**

5 **Click the [Apply] button.**

6 **Click the [OK] button.**

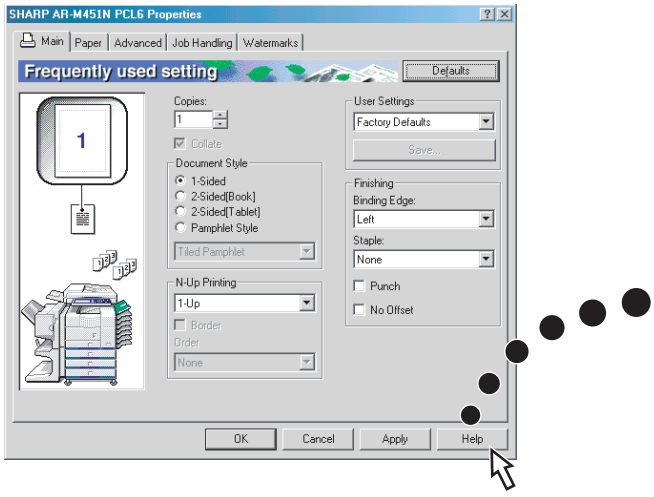
The document filing function will now be used each time you print a job.

Using the Help file to view explanations of the settings

To view on-screen explanations of the settings in the printer driver, open the Help file.

■ Opening Help in Windows

This window is the SHARP AR-M451N PCL6 Properties in Windows Me.



Click [Help] to display the Help screen.

You can search for information using various methods from the tabs.

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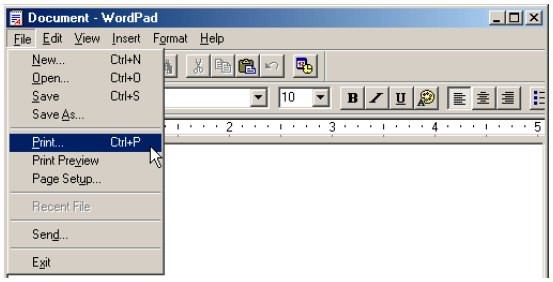
Printing

The procedure for printing in WordPad*1 is explained as an example in this section. If you do not have any documents created in WordPad, create a text document in WordPad that can be printed.

*1 This is a standard accessory program in Windows

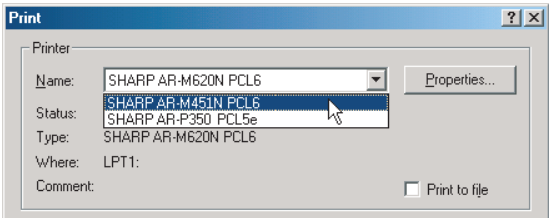
1 Open a document created in WordPad.

2 Select [Print] from the WordPad [File] menu.

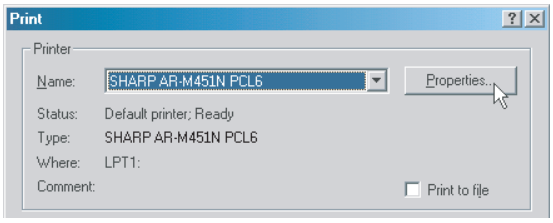


3 Select [SHARP AR-M451N PCL6] from the [Name] drop-down list.

(1) In Windows 95/98/Me/NT 4.0

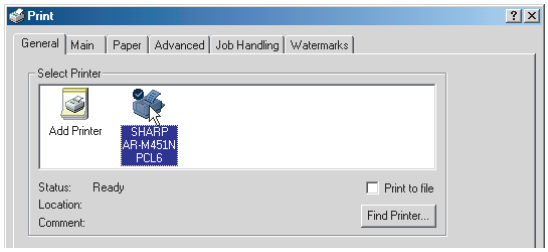


Click the [Properties] button to open the printer driver properties window.

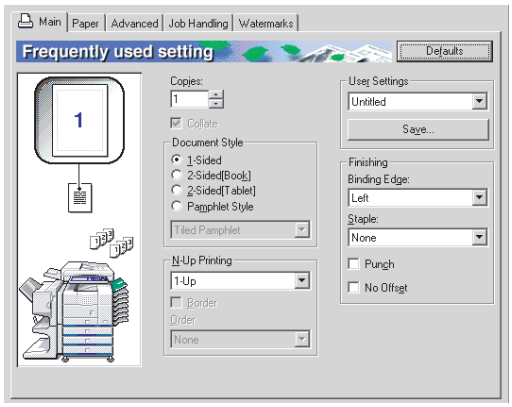


(2) In Windows 2000/XP/Server 2003

Select the [SHARP AR-M451N PCL6] printer icon in [Select Printer].In Windows 2000, the properties consist of five tabs: [Main], [Paper], [Advanced], [Job Handling], and [Watermarks].
In Windows XP/Server 2003, click the [Preferences] button to open the printer driver properties.



4 Click the desired tab and configure settings.

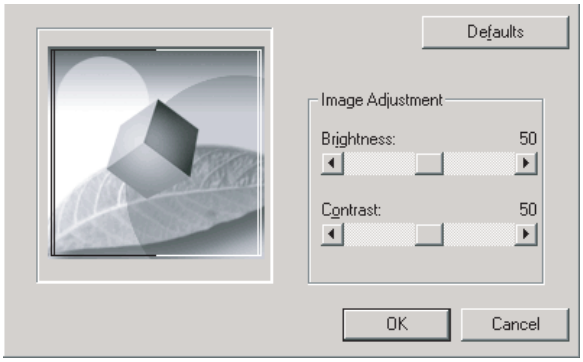


NOTES

- When the properties are opened from an application, the settings that you configure in the properties will remain in effect only while you use the application.
- For information on the settings in the properties, see "SETTING THE PRINTER DRIVER PROPERTIES" in chapter 2.

5 To adjust the print contrast, follow the procedure below. If you do not need to adjust the print contrast, go to step 6 on the next page.

To adjust the print contrast, click the [Image Adjustment] button in the [Advanced settings] tab. The window below will appear. Adjust the brightness and contrast in the [Image Adjustment] field.
When you are finished, go to step 6 on the next page.



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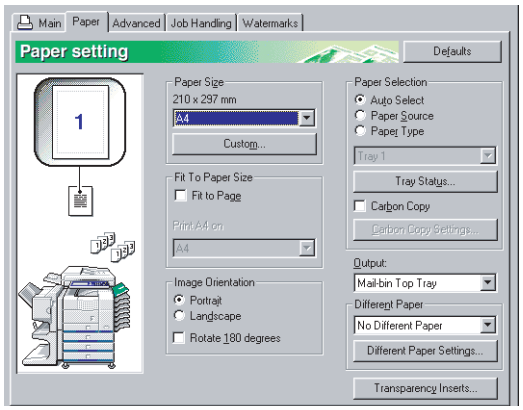
6 Click the [Paper] tab.



Check the paper size to make sure it is correct. Next, specify the paper feeding method in [Paper Selection]. Normally [Auto Select] is used. When finished, click the [OK] button to close the printer properties window.

7 Click the [OK] button in the Print window in Windows 95/98/Me/NT 4.0, or the [Print] button in Windows 2000/XP/Server 2003.

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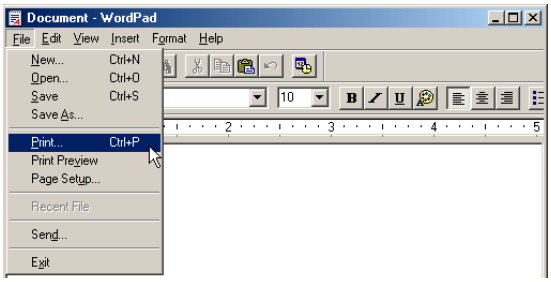
Using options to print

The procedure for using a peripheral device (option) to print is explained below using WordPad*1 as an example. If you do not have any documents created in WordPad, create a text document in WordPad that can be printed.

*1 WordPad is a software application that is included in Windows as a standard accessory.

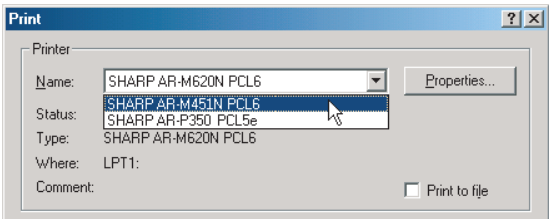
1 Open a document that was created in WordPad.

2 Select [Print] from the WordPad [File] menu.

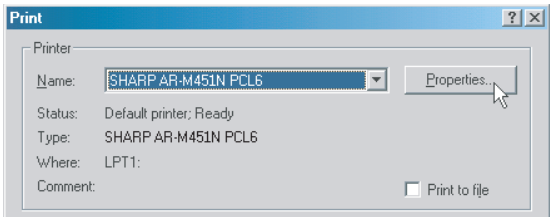


3 Select "SHARP AR-M451N PCL6" from the [Name] drop-down list.

(1) In Windows 95/98/Me/NT 4.0



Click the [Properties] button to open the printer driver properties window.

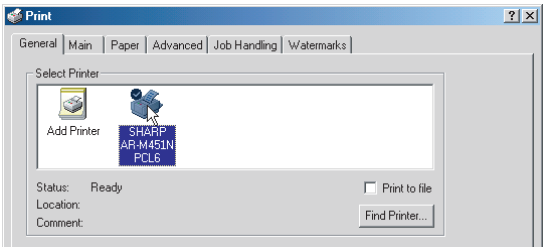


(2) In Windows 2000/XP/Server 2003

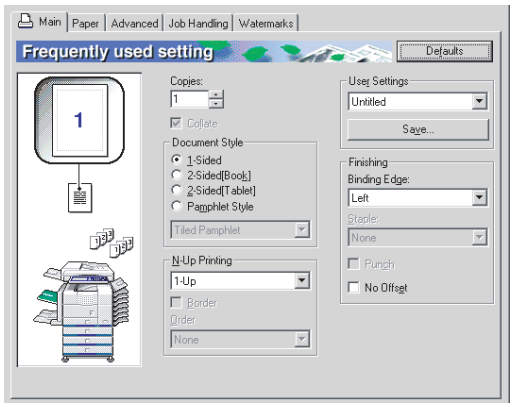
In [Select Printer], select the "SHARP AR-M451N PCL6" printer icon.

In Windows 2000, the properties consist of five tabs: [Main], [Paper], [Advanced], [Job Handling], and [Watermarks].

In Windows XP/Server 2003, click the [Preferences] button to open the printer driver properties.



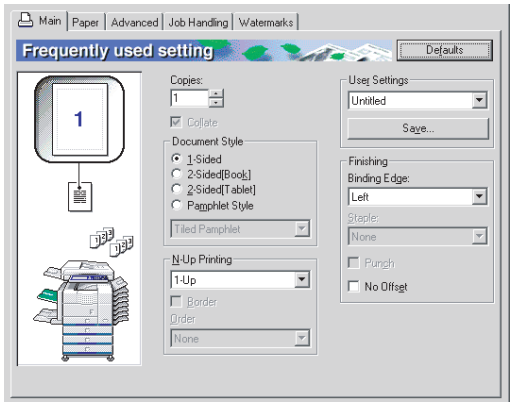
4 Click the desired tab and configure settings.



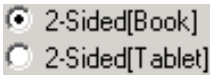
NOTES

- When the properties are opened from an application, the settings that you configure in the properties will remain in effect only while you use the application.
- For information on the settings in the properties, see "SETTING THE PRINTER DRIVER PROPERTIES" in chapter 2.

To use the optional duplex module/bypass tray to print, configure the settings in the following window:



(1) To use a two-sided printing function, open the "Main" tab and select the desired two-sided printing radio button.



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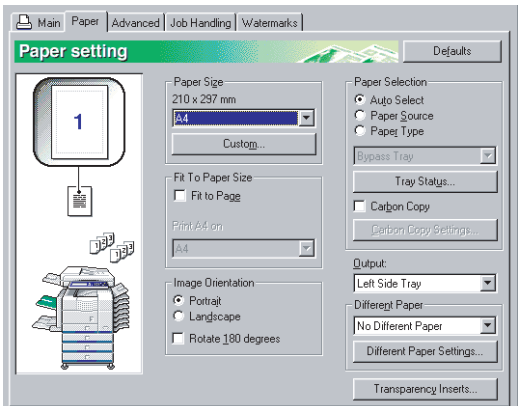
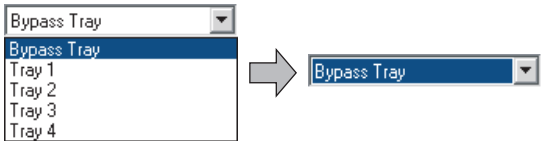
5 Click the [Paper] tab.

Make sure that the selected paper size is correct in the [Paper Size] field.
Next, select the paper feeding method in [Paper Selection]. Normally [Auto Select] is used. If you wish to use the optional paper tray, select it in the following window.



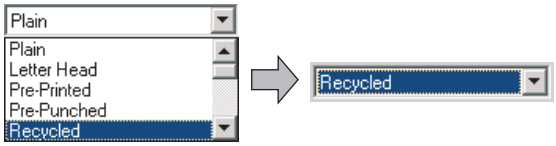
(1) To select a paper tray, select [Paper Source] in [Paper Selection] and then select the desired tray from the list.

Example: Selecting the bypass tray

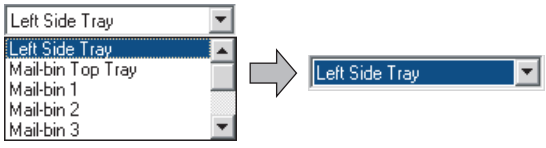


(2) To select the paper type, select [Paper Type] in [Paper Selection] and then select the desired paper type from the list.

Example: Selecting recycled paper

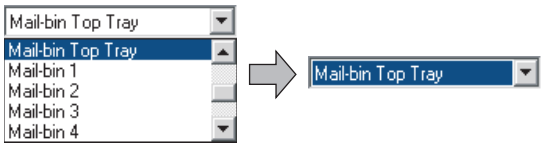


(3) To select the output tray installed on the duplex module, set [Output] to [Left side tray].



When a mail-bin stacker is installed and you wish to have output delivered to a particular mail bin:

Click the [Paper] tab and select the mail bin (each mail-bin has an assigned use) in [Output]. For general output that does not need to be sorted, you can select the mail-bin top tray.



NOTE
The size and type of paper and whether or not a tray can be used for printing are set in "Paper tray setting" in the machine's custom settings. (See "Custom settings" in the "Operation manual (for general information and copier operation)".)
If you select [Paper Source] or [Paper Type], be sure to configure the tray settings in the [Configuration] tab of the printer driver properties.

6 Adjust the print contrast settings as needed (page 1-4). If you do not need to adjust the print contrast, go to step 7.

7 In Windows 95/98/Me/NT 4.0, click the [OK] button in the print window. In Windows 2000/XP/Server 2003, click the [Print] button.

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CHAPTER 2

SETTING THE PRINTER DRIVER PROPERTIES

This chapter explains how to configure settings in the printer driver. The settings are changed in the software application.

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SELECTING PRINTING FUNCTIONS

Almost all print functions are selected in the print driver properties window that appears when printing from an application. The print functions can also be selected in the printer driver properties window that appears when [Properties] is selected in the printer icon menu. The printer driver settings are grouped on tabs in the printer driver properties window.

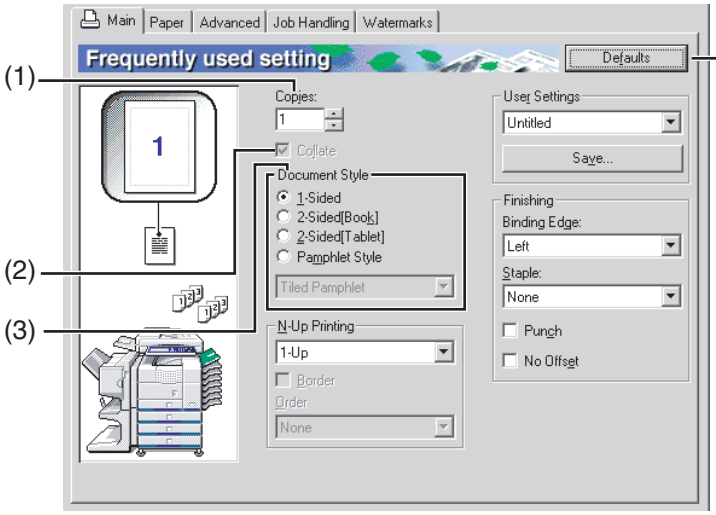
The procedure for selecting settings after opening the printer driver properties from an application is explained in this section. (The windows that are shown are the AR-M451N PCL6 printer driver in Windows Me.)

The following optional peripheral devices are installed in the printer driver windows:

B/W scanner module/DSPF + Saddle stitch finisher + Mail-bin stacker + Punch module + Duplex module

Settings in the [Main] tab

The following window appears when the [Main] tab is clicked. The settings and buttons are explained below.



Click this button to return all settings to the factory default settings. This button appears on all tabs.

(1) Copies

Set the number of copies.
Any number from 1 to 999 can be set.
Default setting: 1

(2) Collate

Select this checkbox to collate the copies.
When the staple function or punch function is turned on, a checkmark automatically appears in the checkbox.
Default setting: Selected

(3) Document Style

Select one-sided or two-sided printing.

[1-Sided].....Print on one side of the paper.
[2-Sided (Book)].....Print on both sides of the paper and bind at the side.
[2-Sided (Tablet)].....Print on both sides of the paper and bind at the top.
[Pamphlet Style]*1.....Print on both sides of the paper and bind down the middle.

Default setting: 1-Sided

*1 Four selections are available for the pamphlet format.

[Tiled Pamphlet]

Print on paper double the size of the document size selected in the application.
The page order will be rearranged as required for the middle binding format.

[2-Up Pamphlet]

The document size selected in the application will be reduced in the same way as in 2-Up printing, and printing will take place using the selected paper size.

[Multiple Tiled Pamphlet]

When using the pamphlet function, printing takes place on paper that is twice the size of the paper specified in the application. When this function is selected and the number of pages exceeds the stapling limit, the pages are divided into groups that can be stapled, and the pages in each group are arranged pamphlet style and stapled. The groups can then be put together to form a pamphlet with the correct page order.

[Multiple 2-Up Pamphlet]

When using the pamphlet function, the pages are reduced and printed 2-Up style on the size of the paper specified in the application. When this function is selected and the number of pages exceeds the stapling limit, the pages are divided into groups that can be stapled, and the pages in each group are arranged pamphlet style and stapled. The groups can then be put together to form a pamphlet with the correct page order.

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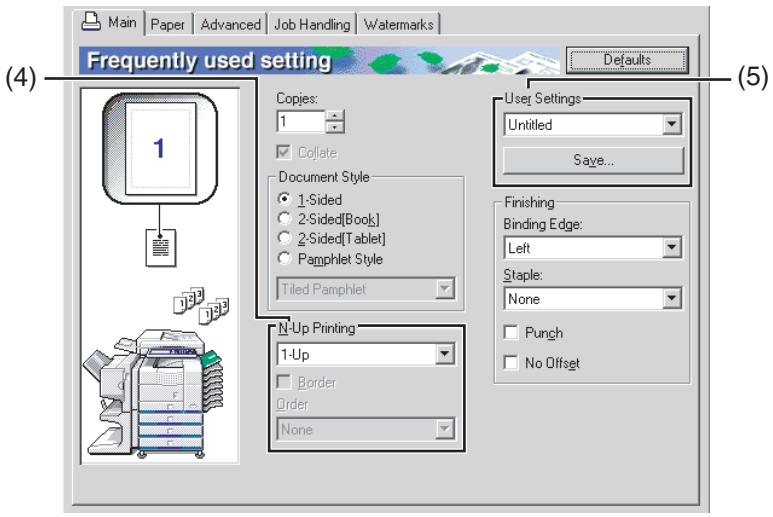


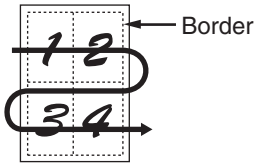
(4) N-Up Printing

Each page is reduced to allow multiple pages to be printed on each sheet. The pages are printed in "Z" order on each sheet.

The following five settings are available:

[1-Up], [2-Up], [4-Up], [6-Up], [8-Up], [9-Up], [16-Up].

Example: 4-Up [Right, and Down]



Default setting: 1-Up

[Border]

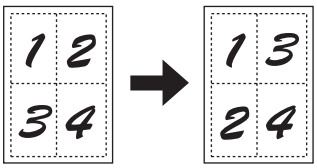
This setting is greyed out when [1-Up] is selected. Select whether or not to print a border around each page when a setting other than 1-Up is selected.

Default setting: Not selected

[Order]

This setting is greyed out when 1-Up is selected. When a setting other than 1-Up is selected, the layout of the pages on the sheet can be selected.

Example: Changing the layout of 4-Up to [Left, and Down].



(5) User Settings

The user can store up to 30 sets of settings, allowing the settings to be easily changed by simply selecting the desired set.

Default setting: Factory Defaults

[Save]

Save the settings under the name that appears in "User Settings".

Up to 20 characters can be entered for the name. If none of the settings have been changed (the settings are still the factory defaults), this button will be greyed out.

When [Delete] appears in the button, it can be clicked to delete a stored set of user settings.

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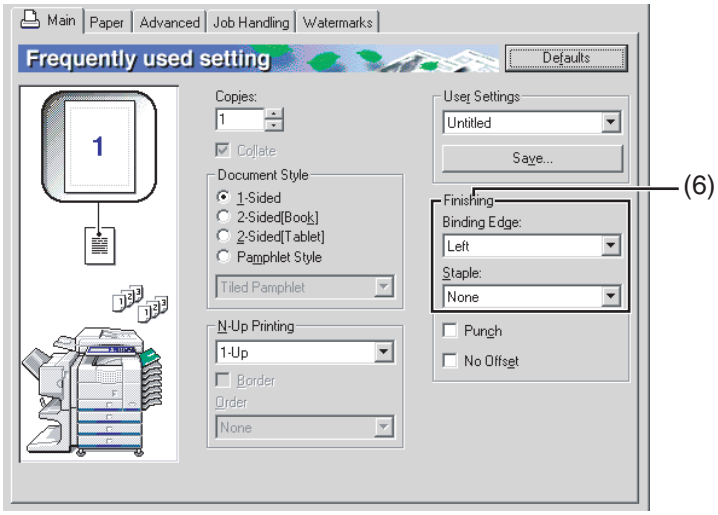


(6) Finishing

Configure settings for staple or punch finishing.

[Binding Edge]

When automatic two-sided printing is performed, the [Binding Edge] setting is used to determine how the top and bottom edges of the front and back sides are positioned. The relation between the document and each of the settings is as follows:

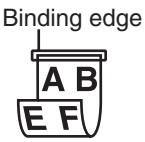
[Left] Left binding

Binding edge

[Right] Right binding

Binding edge

[Top] Top binding



Default setting: Left

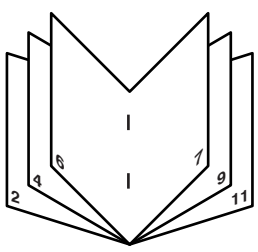
[Staple]

[None] ..... Do not staple.
[1 Staple]..... Staple in one place.
[2 Staples]..... Staple in two places.
Default setting: None

Pamphlet stapling function

The paper is stapled in two places at the centreline, folded in half as shown, and delivered to the output tray.

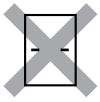
[Example]



Staple sort function

Each sorted set of pages is stapled and delivered to the offset tray, or stapled at the center and delivered to the lower pamphlet tray. (Saddle stitch finisher only) The relations between stapling positions, paper feed orientations, allowed paper sizes, and stapling limits are indicated below.

Possible stapling positions

Vertical paper feeding	One staple at top left corner		Possible paper sizes: A4, B5, 8-1/2" x 11" Staple limit: 50 sheets (When a finisher is installed, up to 30 sheets can be stapled.)
	One staple at bottom left corner		Same as above
	Two staples at left edge		Same as above
	Two staples at centreline*		Pamphlet style is not possible using vertically fed paper
Horizontal paper feeding*	One staple at top left corner		Possible paper sizes: A3, B4, A4R, 11" x 17", 8-1/2" x 14", 8-1/2" x 13" and 8-1/2" x 11" R Stapling capacity: Up to 50 sheets for 8-1/2" x 11"R, A4R and B5R, and up to 25 sheets for other sizes
	One staple at bottom left corner		Possible paper sizes: A3, B4, A4R, 11" x 17", 8-1/2" x 14", 8-1/2" x 13", 8-1/2" x 11"R Stapling capacity: Up to 50 sheets for 8-1/2" x 11"R, A4R and B5R, and up to 25 sheets for other sizes
	Two staples at left edge		Possible paper sizes: A3, B4, 11" x 17" and 8-1/2" x 13" Stapling capacity: Up to 25 sheets for any sizes
	Two staples at centreline		Possible paper sizes: A3, B4, A4R, 11" x 17", 8-1/2" x 11"R Staple limit: 10 sheets

* Not possible when a finisher is installed (only possible when a saddle stitch finisher is installed).

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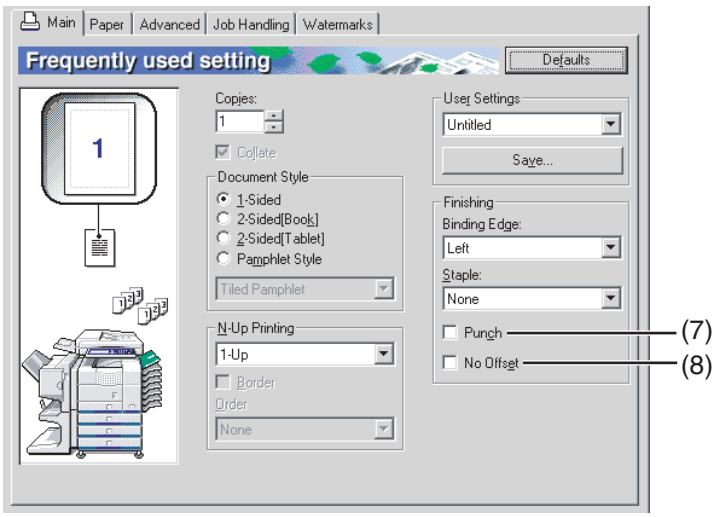


(7) [Punch]

Use this to select the punch function.

When the punch function is selected, [Collate] is automatically selected.

Default setting: Not selected

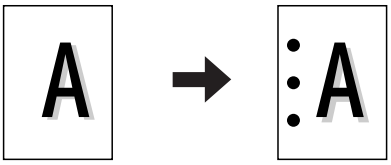
Punch function (only when a punch module is installed)

When a punch module is installed on the saddle stitch finisher, holes can be punched in the printed pages before delivery to the tray. (The punch function cannot be used in combination with the pamphlet function.) When using the punch function, the automatic image rotation function does not operate.

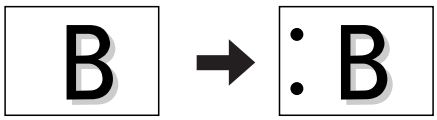
Paper sizes that can be punched are indicated in the specifications on page 3-15 of the "Operation manual (for general information and copier operation)".

[Example]

{Original 1} {Punch positions}



{Original 2} {Punch positions}



(8) [No Offset]

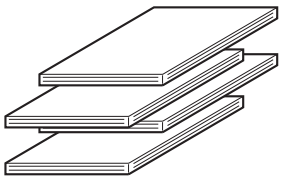
Select this when you do not wish sets of collated or grouped pages to be offset from each other.

Default setting: Not selected

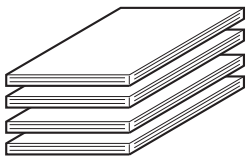
Offset function

Each set of printed pages is offset from the previous set in the offset tray for easy separation. (The offset function operates in the finisher or saddle stitch finisher tray.) The offset function does not operate when the staple sort function is selected.

Offset mode



Non-offset mode



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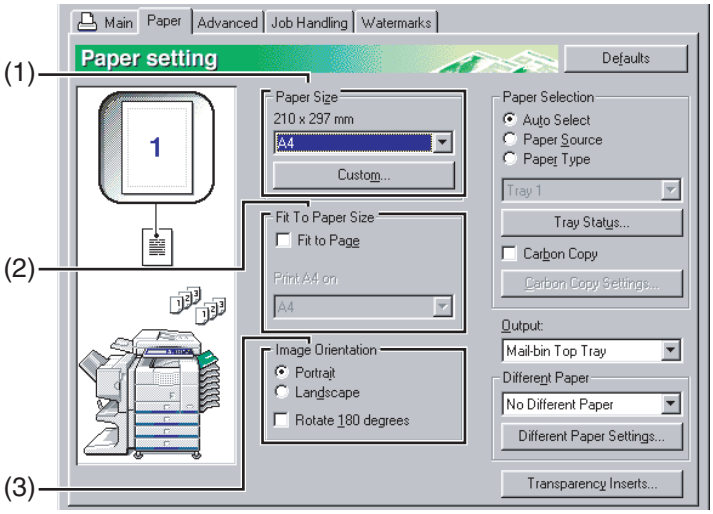
Settings in the [Paper] tab

The following screen appears when the [Paper] tab is selected. The settings and buttons in this screen are explained below.



(1) Paper Size

Select the size of paper to be printed on.
Click one of the paper sizes that appear in the box.
Default setting: A4

[Custom]

A custom paper size can also be set.
Only one custom paper size can be stored.
Click this button to open the window for setting the custom paper size.

(2) Fit To Paper Size

This field is used for the Fit to Page function. This function automatically enlarges or reduces the printed image to match the paper being used. Enlargement or reduction takes place with the image centred on the page.
To use this function, select the [Fit to Page] checkbox and then select the size of paper to be used.

NOTE

Printing normally takes place using the paper size set in the application, regardless of the paper size selected in the printer driver. When the paper size is not specified in the application, the paper size setting in the printer driver is used.

[Fit To Page]

When this checkbox is selected, the print image corresponding to the paper size selected in [Paper Size] is automatically reduced or enlarged to fit the paper selected in [Fit To Paper Size].
Default setting: Not selected

(3) Image Orientation

Set the orientation of the document.
Click the radio button for [Portrait] or the radio button for [Landscape].
[Portrait]..... Select portrait orientation.
[Landscape].... Select landscape orientation.
Default setting: Portrait

[Rotate 180 degrees]

Rotate the image 180° before printing.
Default setting: Not selected

Printing result	
Landscape Rotate 180 degrees	Landscape Rotate 180 degrees
ABCD	ABCD

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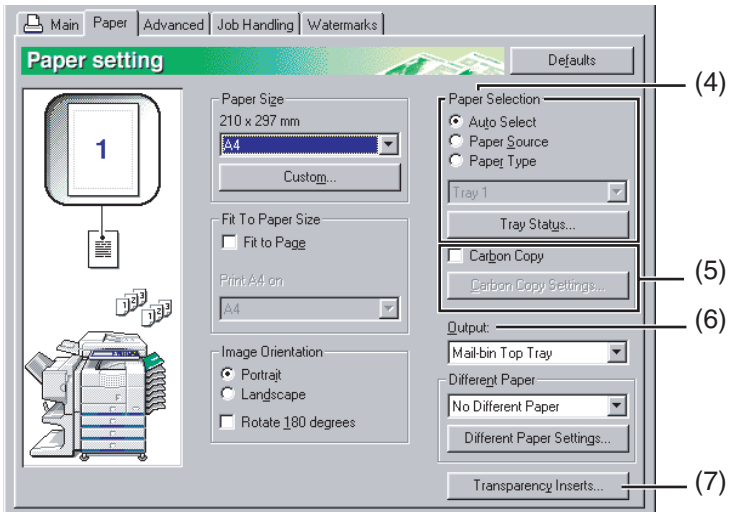


(4) Paper selection

Select the paper tray and paper type in this item.
Default setting: Auto Select

[Auto Select]

When [Auto Select] is selected, the tray containing the paper specified in [Paper Size] is automatically used.

[Paper Source]

When this is selected, paper is drawn from the specified tray regardless of the paper size setting.

[Paper Type]

When this selected, paper is fed from the tray that has the specified type of paper.
There are also 7 user type settings, and a name can be assigned to each type (maximum of 14 characters).

NOTE

The size and type of paper and whether or not a tray can be used for printing are set in "Paper tray setting" in the machine's custom settings. (See "Custom Settings" in the Operation manual (for general information and copier operation.))
If you select [Paper Source] or [Paper Type], be sure to configure the tray settings in the [Configuration] tab of the printer driver properties.

[Tray Status]

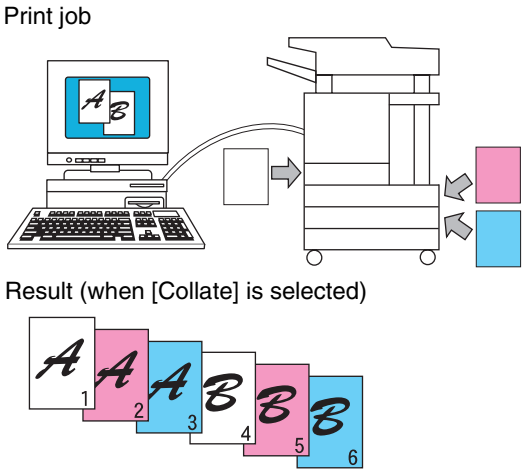
Click this button to display the paper size, paper type, and paper remaining in the machine's paper trays.
This function operates when the machine is used on a network.

(5) Carbon copy

Select this function to print multiple copies of the same document on paper from different trays. Click the [Carbon Copy Settings] button to configure the carbon copy settings. For example, if regular paper is loaded in tray 1 and coloured paper is loaded in tray 2, you can print an original and a copy of an invoice. You can also load regular paper in tray 1 and recycled paper in tray 2 to print a copy for presentation and a copy for retention.

[Carbon Copy Settings]

Click this button to configure settings in the [Carbon Copy Settings] window.
Default setting: Not selected

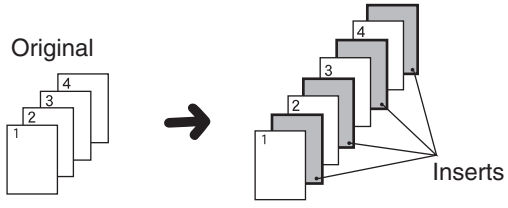


(6) Output

Use this setting to select the output tray. When the stapling function is selected, the centre tray cannot be selected.
Default setting: Centre Tray (This varies depending on what options are installed.)

(7) Transparency Inserts

The printer can be instructed to separate the transparencies by inserting blank sheets of paper. Click this button to open the window for selection of transparency insert settings.
This cannot be selected when two-sided printing, the staple function, or the punch function is selected.



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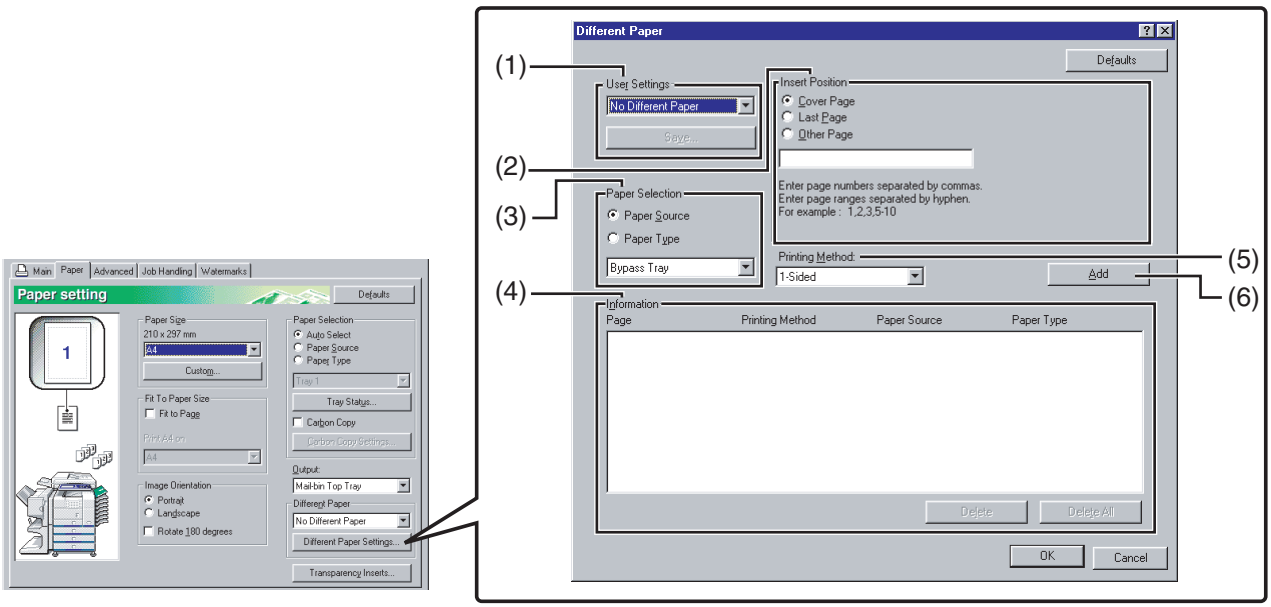

[Different Paper Settings]

These settings are used to print selected pages on a specified type of paper or on paper from a specified tray, or to have blank sheets added as inserts at specified pages.

(1) User Settings

Up to 30 sets of [Different Paper Settings] can be stored, allowing settings to be changed by simply selecting a set.

Default settings: No Different Paper

[Save]

Click this button to save a set of different paper settings. A [User Settings] window will appear. User setting text entries can be up to 20 characters long. If a [Delete] button appears, a set of user settings can be deleted by clicking this button.

(2) Insert Position

[Cover Page]

When this is selected, paper from a different paper source or a different type of paper is used for the first page of the print job. Select [Paper Source] or [Paper Type].

[Last Page]

When this is selected, paper from a different paper source or a different type of paper is used for the last page of the print job. Select [Paper Source] or [Paper Type].

[Other Page]

When this is selected, specify the pages where you wish to insert a different type of paper. If the [Printing Method] (5) is set to [Blank], the sheet will be inserted in front of the specified page. If [1-Sided] is selected, the specified page will be printed on the front side of the inserted sheet. If [2-Sided] is selected, the specified page and the following page will be printed on the front side and back side of the inserted sheet.

Default setting: Cover page

(3) Paper Selection

[Paper Source]

Select this if you wish to specify a paper tray to be used for [Insert Position] (2).

[Paper Type]

Select this if you wish to specify a paper type to be used for [Insert Position] (2).

Default setting: Paper Source

(4) Information

The stored [Different Paper] settings appear here.

[Delete]

Click this button to delete the selected settings in the Information list.

[Delete All]

Click this button to delete all settings in the Information list.

(5) Printing Method

This is used to select the printing method for a cover page, last page, or other page.

[Blank]

Insert a blank sheet at the specified page.

[1-Sided]

Select this to print only on one side of the paper used for a cover page, last page, or other page. When this is selected for the [Last Page] (back cover), printing takes place on the back side of the sheet.

[2-Sided]

Select this to print on both sides of the paper used for a cover page, last page, or other page.

Default setting: No

(6) [Add]

Click this button to save a set of [Different Paper] settings. The settings will be added to the Information list.

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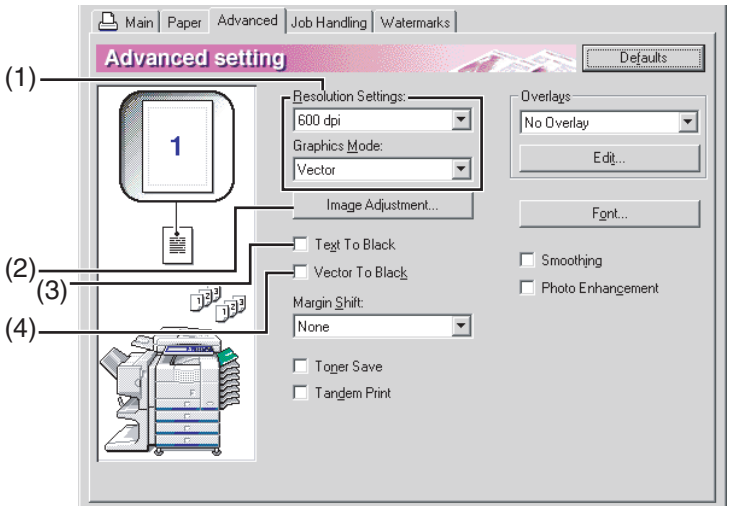
Settings in the [Advanced] tab

The following screen appears when the [Advanced] tab is selected. The settings and buttons in this screen are explained below.



(1) Image Quality

This item is used to select the [Resolution Settings] and [Graphics Mode] for printing.

[Resolution Settings]

Select 300 dpi or 600 dpi.
Default setting: 600 dpi

[Graphics Mode]

Select [Raster] or [Vector] (HP-GL/2). [Raster] is used to print with raster graphics, and [Vector] is used to print with Vector (HP-GL/2) commands.
Default setting: Vector (HP-GL/2)

(2) Image Adjustment

This field is used to adjust the brightness and contrast.

[Brightness]

This adjusts the brightness of colours. The brightness can be set from 0 to 100. Colours will appear closer to white as the number is increased.
Default setting: 50

[Contrast]

The contrast can be set from 0 to 100. The higher the number, the higher the contrast.
Default setting: 50

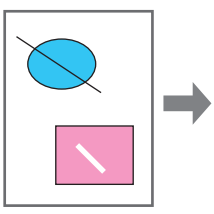
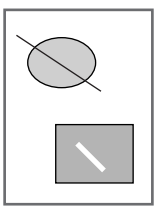
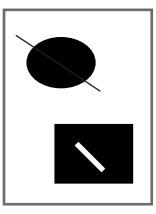
(3) Text To Black

Use this setting to have all text other than white text printed in black. (This setting is useful when printing faint coloured text that is difficult to read.)

Print data	Printing result	
	☐ Text To Black	☑ Text To Black

(4) Vector To Black

Use this setting to have all lines or areas other than white lines areas printed in black. (This setting is useful when printing faint coloured lines or areas that are difficult to recognize.)

Print data	Printing result	
	☐ Vector To Black	☑ Vector To Black
		

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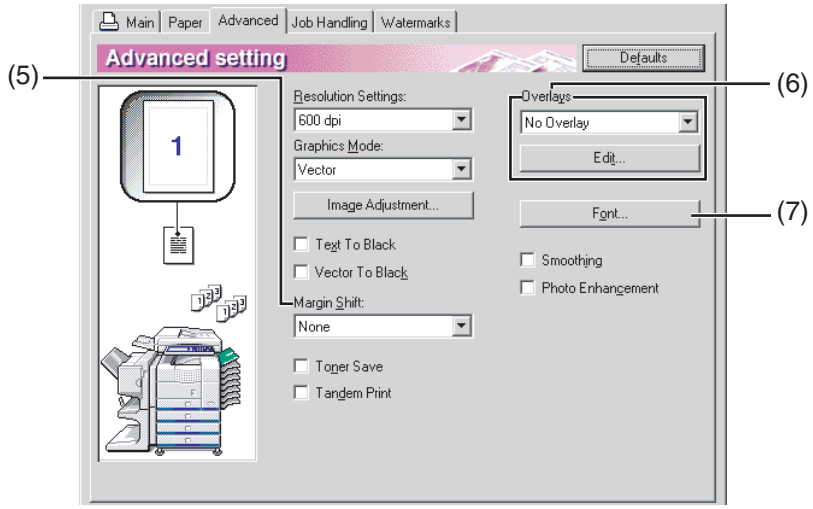
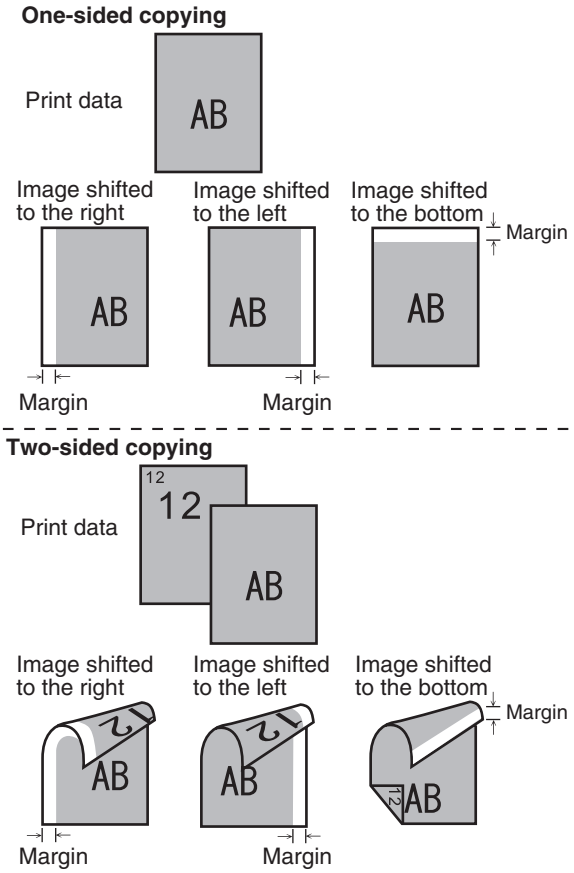


(5) Margin Shift

This is used to shift the print image to create margin at the left, right, or top of the paper. Select [None], [10 mm], [20 mm], or [30 mm].
Default setting: None



(6) Overlays

This function is used to print an image as an overlay on a previously created form. The form must be created before the function can be used.
Default setting: Not selected

[Edit]

Click this button to open the overlay settings window. The file selected in this window will be used as the overlay.

(7) Font

Click this button to configure font settings.

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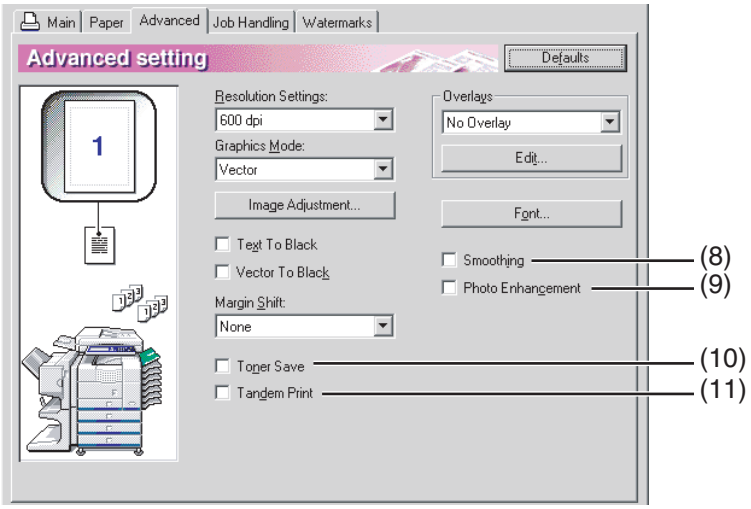

(8) Smoothing

Check "Smoothing" to smooth the edges of text or graphics and reduce jagged lines in order to obtain virtually high resolution.

(9) Photo Enhancement

This mode is most useful when printing Photographic Image. The image quality might be down for Line Art.

(10) Toner Save

Select this to save toner. Solids will be printed in halftone to reduce toner consumption.

(11) Tandem Print

Two machines that are connected in a system that allows tandem copying (sharing a large copy job between two machines) can also be used for tandem printing. To use tandem printing, settings must be configured in the key operator programs. (See "Tandem setting" in "Network settings" on page 5-7 of the key operator program.)

Default setting: Not selected

To cancel a tandem printing job

Touch the [STOP/DELETE] key in the job status screen of both the server machine and the client machine. Printing will be cancelled and the job deleted.

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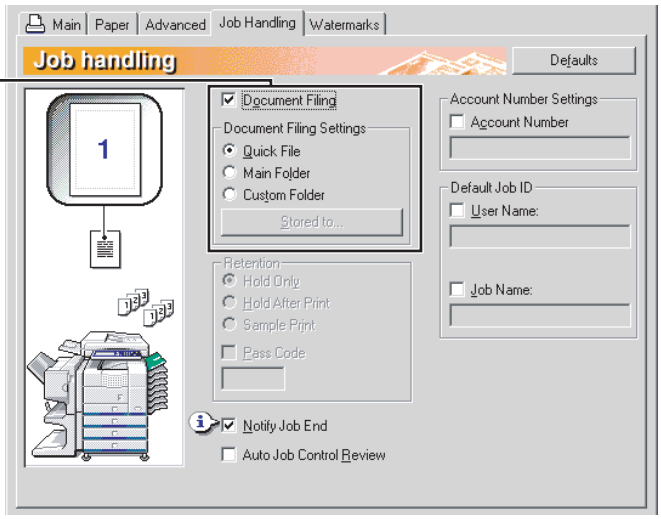
Settings in the [Job Handling] tab

The following window appears when the [Job Handling] tab is clicked. The settings and buttons are explained below.



(1) Document Filing

This setting is used to save a print job as a data file in the hard disk of the machine. Two methods of saving the image are available: Automatic temporary saving [Quick File], [Main Folder] and [Custom Folder]. The saved image can be called up as needed and printed or otherwise manipulated. A name (user name, file name, etc) can be assigned to the file for easy searching.

For information on using this function at the operation panel of the machine, see chapter 7, "Document filing function", of the "Operation manual (for general information and copier operation)".

Default setting: Not selected.

[Quick File]

This setting is used to have a print job automatically saved to the automatic temporary save folder when printing is finished. A user name and job name can assigned to the file (page 2-14); however, the job cannot be saved as a confidential file with a password (page 2-13).

[Main Folder]

Select this when you wish to save a print job in the machine's "Main Folder". A user name and job name (page 2-14) can be assigned to the file. A confidential print job can be saved in this folder with a passcode (page 2-13).

[Custom Folder]

Select this when you wish to save a print job in the machine's "Custom Folder". A user name and job name (page 2-14) can be assigned to the file. A confidential print job can be saved in this folder with a passcode (page 2-13).

[Stored to]

When "Custom Folder" is selected, click this button to open the "Stored to" window. This window is used to select the folder for saving the file, and to enter a passcode if one has been established for the folder. The folder (Main Folder or Custom Folder) is selected from the list in the "Folder Selection" screen. " " appears next to folders that have passcodes.

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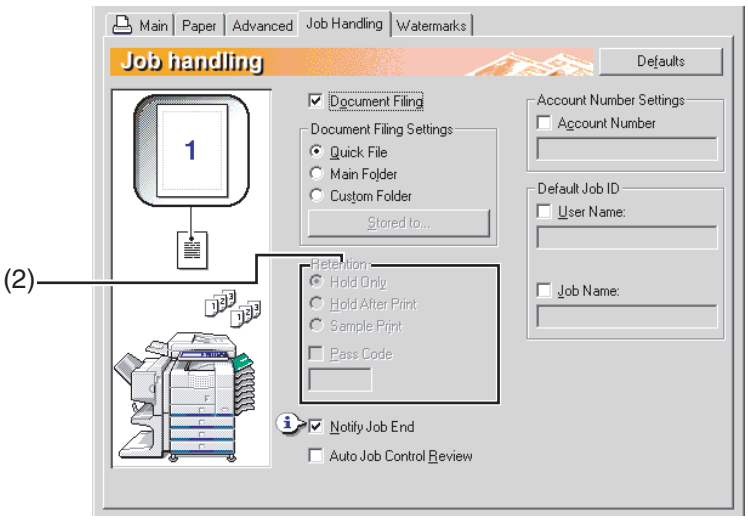

(2) Retention

[Hold Only]
This setting is used to prevent a print job from being misplaced. When a print job is sent to the computer, the machine will hold it in a Filing folder without printing it. The user can initiate printing as needed using the operation panel of the machine. The job can also be deleted without printing it.

[Hold After Print]
This setting is used to hold a print job in a Filing folder after it is printed. The file can be printed again or deleted as needed.

[Sample Print]
This setting is used to prevent the occurrence of excessive misprints when printing a large number of copies. When this setting is selected and a print job is sent to the machine, only the first set of copies is printed and then the job is stored in a Filing folder. After checking the first set of copies to make sure that the margins, staple positions, and other aspects of the job are satisfactory, the user initiates printing from the operation panel of the machine and the remaining sets are printed. (The sample set is included in the total number of sets.) If the sample set is not satisfactory, the job can be deleted.

[Pass Code] (5-digit number)
To require that a passcode be entered at the operation panel of the machine to print a job stored in a Filing folder, enter the passcode (5-digit number) in [Pass Code].

- **When a passcode is set in "Hold Only" mode**
  The passcode must be entered at the operation panel of the machine to print the job.
- **When a passcode is entered in "Hold After Print" mode**
  After the initial printing, the passcode must be entered at the operation panel of the machine to print the job again.
- **When a passcode is set in "Sample Print" mode**
  After printing the sample set, the passcode must be entered at the operation panel of the machine to print the remaining sets.
  Default setting: Hold Only

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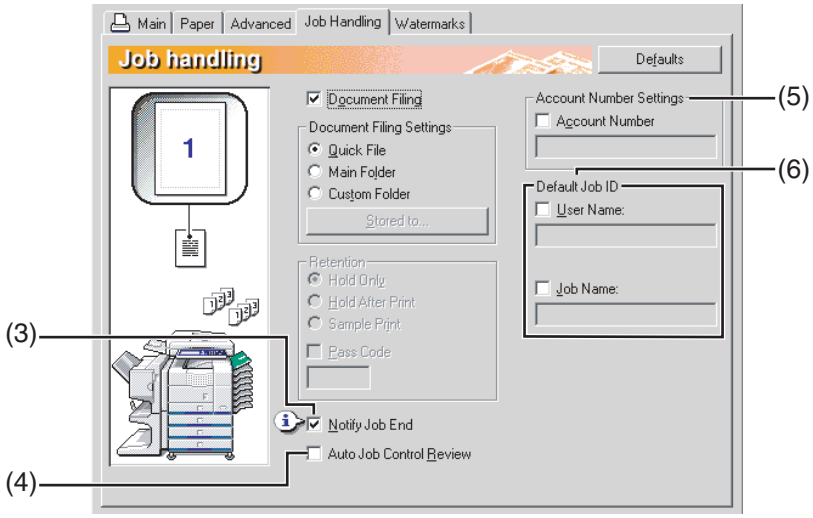

(3) Notify Job End

This is used to select whether or not you wish to be notified when a print job is finished. This setting is only effective when the printer status monitor is running.

If the printer status monitor is not running, the setting will not operate even if selected.

Default setting: Selected

(4) Auto Job Control Review

Select this to have the job control screen always open when printing from the printer driver.

If you changed the account number, user name, job name, or passcode, you can also save your changes.

Default setting: Not selected

(5) Account Number Settings

When "Auditing mode" is enabled in the key operator programs, a count is kept of the number of pages printed by each account. Enter your account number for printing that was established in the key operator programs. When the [Account Number] checkbox is selected, the number entered in this tab will be used.

To establish account numbers, see the key operator program manual.

If a limit for the number of pages that your account can print is set in the key operator programs, printing will not be possible after the limit is reached.

If "Cancel jobs of invalid accounts" is enabled in the key operator programs and an incorrect account number or no account number is entered, printing will not take place. If you do not wish to restrict use of the machine, disable the setting. Pages printed without entering a valid account number will be added to the "OTHERS" count.

(6) Default Job ID

Use this to set the default user name and job name that appear in the operation panel of the machine. Note that if [User Name] and [Job Name] are not selected, your Windows login name and the file name selected in the application will be automatically used. The names that appear in the dialog box that appears when printing is executed will appear in the operation panel of the machine.

[User Name]

Use this to set the default user name that appears in the operation panel of the machine. Select this checkbox to have the [User Name] entered in this window appear in the operation panel of the machine. If not selected, your Windows login name will be automatically used. The name that appears in [Job ID] in the [Job Control] window (which appears when printing is executed) will appear in the operation panel of the machine. Up to 16 characters can be entered for the name.

Default setting: Not selected

[Job Name]

Use this to set the default job name that appears in the operation panel of the machine. Select this checkbox to have the [Job Name] entered in this window appear in the operation panel of the machine. If not selected, the file name selected in the application will be automatically used. The name that appears in [Job ID] in the [Job Control] window (which appears when printing is executed) will appear in the operation panel of the machine. Up to 30 characters can be entered for the name.

Default setting: Not selected

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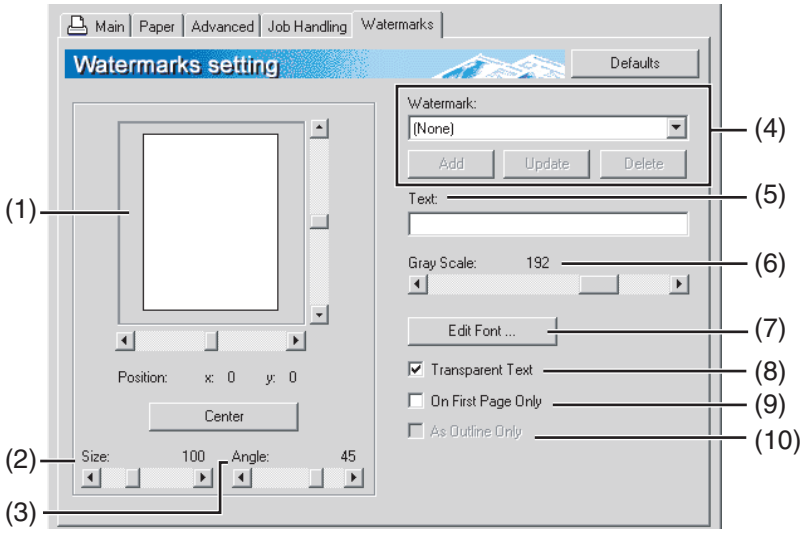
Settings in the [Watermarks] tab

The following window appears when the [Watermarks] tab is clicked. The settings and buttons are explained below.



(1) Watermark preview

The watermark function is used to print a watermark (a faint, shadowlike text image) on the paper. This shows a preview of the currently selected watermark.

The position of the watermark can be adjusted by directly dragging the image with your mouse, or by using the scrollbars at the right and bottom of the preview screen.

Default setting: x: 0, y: 0

NOTE

The image that appears in the Watermark Preview is an approximate representation of what will appear in the print.

[Center]

Select this setting to have the watermark printed in the centre of the paper.

(2) Size

Use this setting to adjust the size of the characters of the currently selected watermark.

Any number from 6 points to 300 points can be selected.

Default setting: 200 (points)

(3) Angle

Use this setting to adjust the angle of the text of the currently selected watermark.

Select any angle from -90° to 90°.

Default setting: 45°

(4) Watermark

Select a watermark from the watermarks that appear in the box.

Default setting: None

[Add]

Click this button to create a custom watermark.

[Update]

Click this button to adjust the size or angle of the text of a stored watermark.

[Delete]

Click this button to delete a stored watermark.

(5) Text

When you wish to create a custom watermark, enter the text of the watermark here. Up to 100 characters can be entered. To store the entered text as a watermark, click the [Add] button explained in (4) above.

(6) Gray Scale

Use this setting to adjust the colour of the font of the currently selected watermark.

Any value from 0 to 255 points can be selected.

Default setting: 192

(7) Edit Fonts

Use this setting to select the font of the currently selected watermark.

(8) Transparent Text

Select this checkbox when you wish to have the characters of the watermark printed faintly in the background of the text.

Default setting: Selected

(9) On First Page Only

Select this checkbox when you want to have a watermark printed on only the first page of a print job.

Default setting: Not selected

(10)As Outline Only

Select this checkbox when you want to print only the outline of the characters of a watermark.

Default setting: Not selected

This setting cannot be selected when setting (8) is selected.

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CHAPTER 3

WEB PAGES IN THE PRINTER

This chapter explains various functions that allow you to access the Web pages in the printer from your computer.

Page

REMOTE OPERATION VIA A NETWORK 3-2
- How to access the Web page and view Help 3-2

ABOUT THE WEB PAGES (FOR USERS) 3-3
- Directly printing a file on a computer 3-4

ABOUT THE WEB PAGES (FOR THE ADMINISTRATOR) 3-5
- Protecting information programmed in the Web page ([Passwords]) 3-6
- Directly printing a file on an FTP server 3-7
- E-mail Print 3-9
- E-mail Status and E-mail Alert settings 3-10

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REMOTE OPERATION VIA A NETWORK

You can use a Web browser such as Netscape Navigator or Internet Explorer on your computer to access the Web page in the machine and configure settings.
The Web pages include both pages for users and pages for the administrator. In the user Web pages, users can monitor the machine, and directly print a file specified on a computer.
In the administrator Web pages, the administrator can configure the machine's e-mail settings, settings for print by e-mail, and passwords. Only the administrator is allowed to configure these settings.

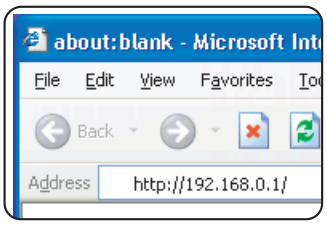
How to access the Web page and view Help

Follow these steps to access the Web page. To view explanations of the function settings that can be configured remotely via the network using the machine's Web page, click the "General" button or the "Document Filing" button in Help in the menu frame.

1 Start your Web browser on your computer.

- Recommended Web browser
  Internet Explorer: 5.5 or higher (Windows), 5.1 or higher (Macintosh)
  Netscape Navigator: 6.0 or higher (or equivalent)

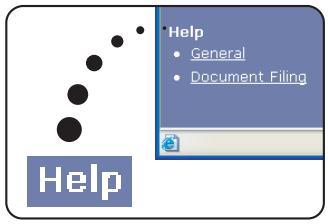
2 In the Address box in your Web browser, enter the IP address that is programmed in the machine.



To check the IP address, see page 5-7.

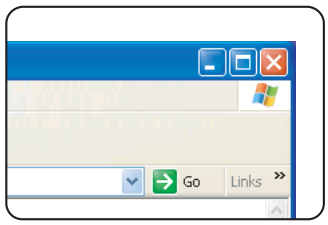
When the connection is completed, the Web page will appear in your Web browser.(page 3-3)

3 Click the "General" button or the "Document Filing" button in Help in the menu frame.



The Help page provides detailed explanations of the settings.

4 Close the Help page



In the menu frame, select a setting that you wish to configure.
When you have finished using the Web page, click the (close) button in the top right corner of the page.

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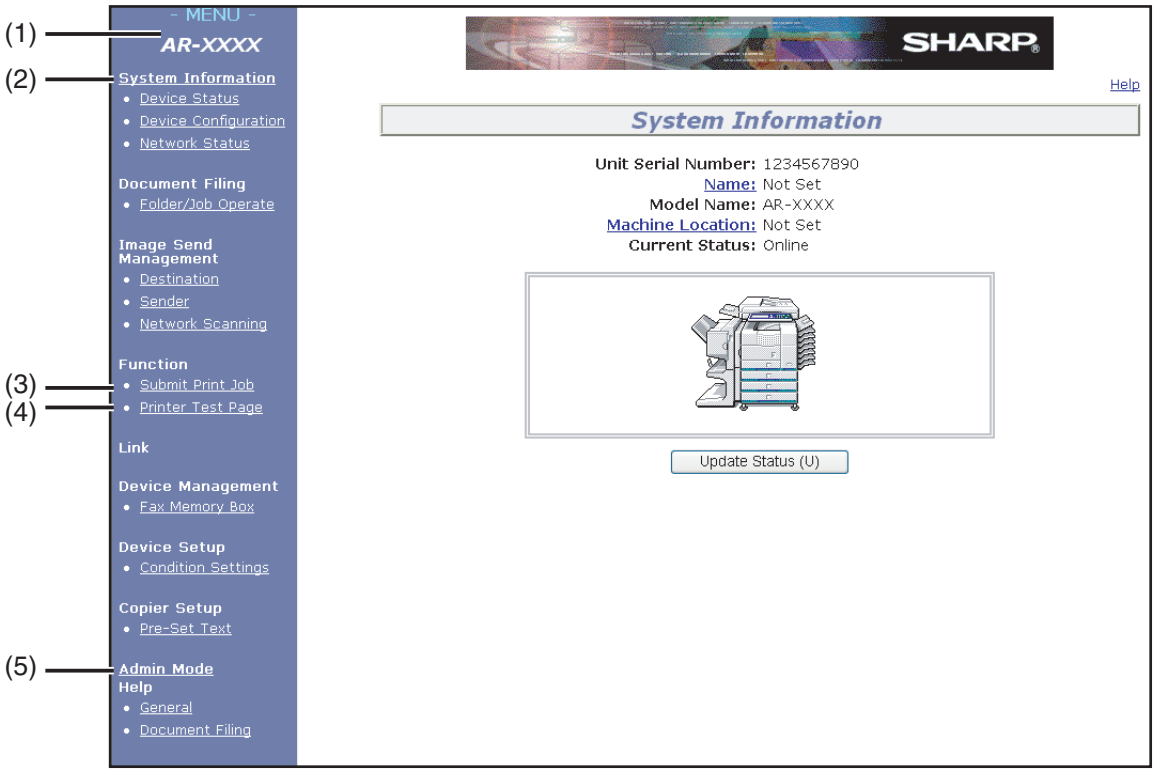
ABOUT THE WEB PAGES (FOR USERS)

When you access the user Web pages in the machine, the following page will appear in your browser.
A menu frame appears on the left side of the page. When you click an item in the menu, a screen appears in the right frame that allows you to configure settings for that item.
When you have finished configuring settings, be sure to click [Submit] to save them. For explanations of the settings, click [General] under [Help] in the menu frame.



(1) Menu frame
Click a setting in the menu to configure it.

(2) System Information
Shows the current status of the machine and model name.
- Device Status
  Shows the current status of the machine, paper trays, output trays, toner and other supplies, and page counts.
  Out of paper and other warnings appear in red.
- Device Configuration
  Shows what options are installed.
- Network Status
  Shows the network status. Information on "General", "TCP/IP", "NetWare", "AppleTalk", and "NetBEUI" is shown on the respective pages.

(3) Submit Print Job
A file on a computer can be printed out.
Directly printing a file on a computer (page 3-4)

(4) Printer Test Page
The "Printer Settings List", which shows printer condition settings and key operator settings, and various font lists can be printed.

(5) Admin Mode
To open the Web pages for the administrator, click here and then enter the administrator's user name and password.
ABOUT THE WEB PAGES (FOR THE ADMINISTRATOR) (page 3-5)
Protecting information programmed in the Web page ([Passwords]) (page 3-6)

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Directly printing a file on a computer

The address of a file that can be accessed from your computer can be specified to directly print the file without using the printer driver.
In addition to files on your computer, files on any other computer on the same network that can be accessed from your computer can be printed in this way.

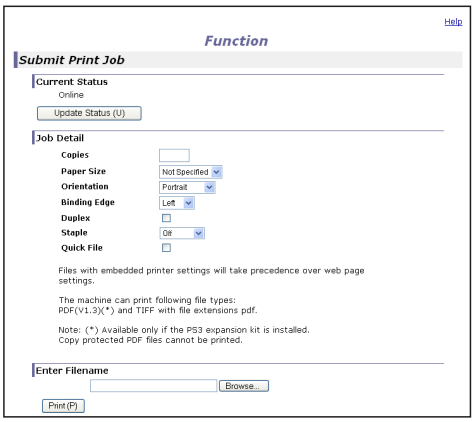
To directly print a file on a computer, follow these steps:

1 Click [Submit Print Job] in the link menu of the menu frame.

The "Submit Print Job" page appears.

2 Select print settings in [Job Detail].

The settings are described in the table below.



3 Enter the address of the file that you wish to print in [Enter Filename].

You can also click [Browse] to browse for the file.

4 Click [Print].

Printing begins.

NOTE
- Only PDF and TIFF files can be printed.
- To print PDF files, the optional PS3 expansion kit must be installed. Encrypted PDF files cannot be printed.

Advanced job settings

Item	Description	Factory default setting
Copies	Set the number of copies from 1 to 999.	1
Paper Size	Select the size of paper to be used for printing.	Not Specified
Orientation	Select the printing orientation. (Portrait / Landscape)	Portrait
Binding Edge	Select the binding position for two-sided printing. (Left / Top / Right)	Left
Duplex	To print on both sides of the paper, select this checkbox. (Only for models that support the two-sided printing.)	Not selected
Staple	Select a staple setting. (Off / 1 Staple / 2 Staples)	Off
Account Number	When "AUDITING MODE" is enabled in the key operator programs, enter your 5-digit account number.	-
Quick File	To save a job using Quick File of the document filing function, select this checkbox.	-

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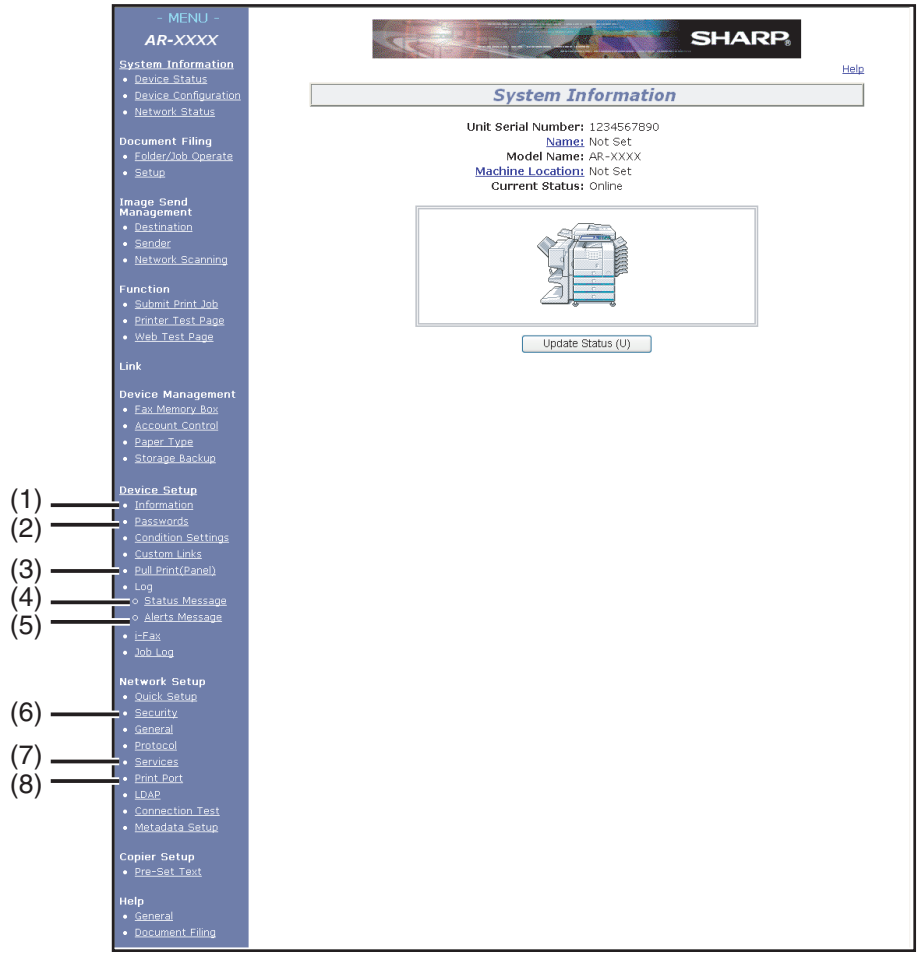
ABOUT THE WEB PAGES (FOR THE ADMINISTRATOR)

In addition to the menus that appear for users, other menus that can only be used by the administrator appear in the administrator Web pages.
A menu frame appears on the left side of the page. When you click an item in the menu, a screen appears in the right frame that allows you to configure settings for that item. Settings that can only be configured by the administrator are explained here.



(1) Information
Configure machine identification information for the status & alert E-mail function.
(page 3-10)

(2) Passwords
Passwords can be established to allow the system administrator to protect the Web site.
Enter the passwords that you wish to establish and click the [Submit] button.
There are two types of password authentication: one for users and one for administrators.
(page 3-6)

(3) Pull print (Panel)
The machine has a direct print function that lets you print a PDF file or TIFF file from the operation panel without using the printer driver. This screen is used to enter the FTP servers that store the files. Up to four FTP servers can be entered.
(page 3-7)

(4) Status Message
Use this to set up a schedule for sending specified count information such as the total count and the output counts for the printer and copy functions. The e-mail addresses of the recipients and the schedule must be entered.
(page 3-11)

(5) Alerts Message
This is used to send information on error conditions such as when the machine runs out of paper or toner, or a misfeed or failure occurs. The e-mail addresses of the recipients of the information must be entered.
(page 3-11)

(6) Security
Unused ports can be disabled for greater security and port numbers can be changed.

(7) Services
Configure information concerning the e-mail system.
(page 3-10)

(8) Print Port
This is used to configure settings for E-mail print.
(page 3-9)

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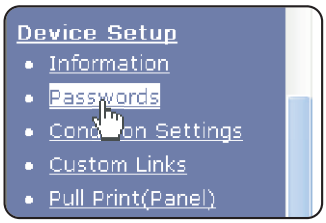
Protecting information programmed in the Web page ([Passwords])

Passwords can be set (click [Passwords] in the menu frame) to restrict Web page access and protect settings. The administrator must change the password from the factory default setting. The administrator must also take care to remember the new password. The next time the Web pages are accessed, the new password must be entered.
A password can be set for the administrator and a password can be set for users.

1 Click [Passwords] in the menu frame.



2 Enter the current password in "Admin Password".

When establishing a password for the first time, enter "Sharp" in "Admin Password".

CAUTION
Be sure to enter "S" in upper case and "harp" in lower case (passwords are case sensitive).

3 Enter passwords in "User Password" and "Admin Password".

- A maximum of 7 characters and/or numbers can be entered for each password (passwords are case sensitive).
- Be sure to enter the same password in "Confirm Password" as you did in "New Password".

4 When you have finished entering all items, click [Submit].

The entered password is stored.

After setting the password, turn the machine power off and then back on.

When prompted to enter a password, a user should enter "user" and an administrator should enter "admin" in "User Name". In "Password", the respective password for the entered user name should be entered.
For more information, click [Help] in the upper right-hand corner of the window.

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Directly printing a file on an FTP server

A FTP server can be stored in the machine to enable direct printing of a file on the FTP server from the operation panel of the machine without using the printer driver.
Files with the extensions pcl, ps*, pdf*, tiff, tif, and prn can be printed.
*The PS3 expansion kit is required. (Encrypted PDF files cannot be printed, with the exception of files encrypted with a null password.)

■ Storing an FTP server

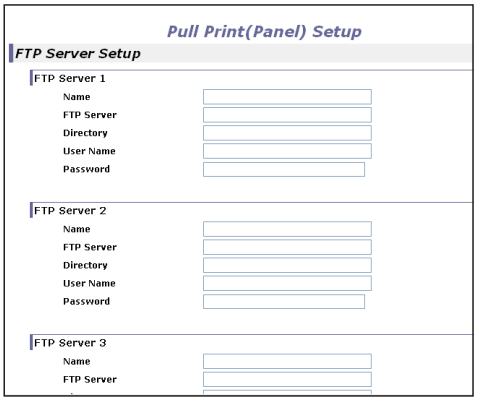
To directly print a file on an FTP server, the FTP server must be stored.
Follow these steps:

1 Click [Pull Print (Panel)] in the link menu of the menu frame.

The "Pull Print (Panel)" page appears.

2 Store the FTP server information in [FTP Server Setup].

For detailed information, click the [Help] button in the upper right-hand corner of the window.



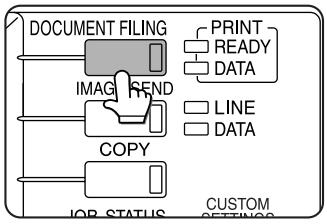
3 Enter the FTP server information.

For detailed information, click the [Help] button in the upper right-hand corner of the window.

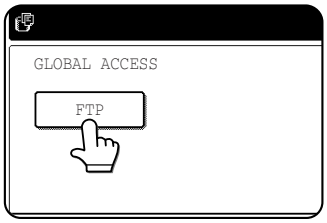
4 Click [submit] to store the entered information.

■ Printing a file on an FTP server from the operation panel of the machine

1 Press the [DOCUMENT FILING] key twice to display the global access screen.

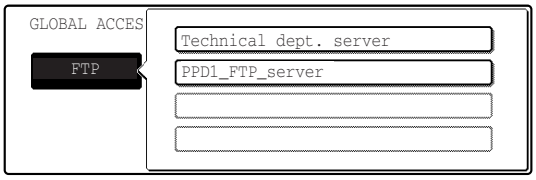


2 Touch the [FTP] key.



This screen will not appear if an FTP server has not been stored.

3 Select the desired FTP server.



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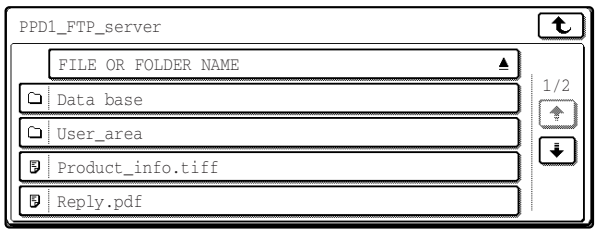
4 Select the desired file or folder name.



If the file or folder does not appear in the screen, press the [↑] or [↓] key until it appears.

To return to the global access screen, touch the [↑] key.

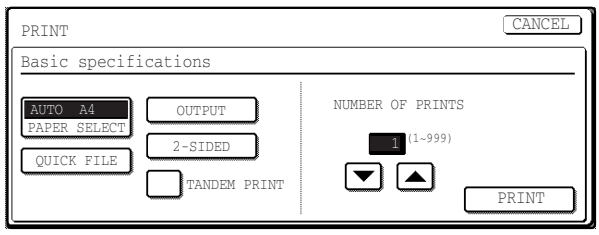
When a file name ( ) is touched, the print screen appears (step 5).

When a folder ( ) is touched, all files in the folder appear. Touch the desired file. At this time, [↑] and [↑] appear in the upper right of the screen.

Touch [↑] to move up to the preceding folder. Touch [↑] to move up to the root folder.

To change the order of display, touch "FILE OR FOLDER NAME".

5 Select print settings in the print screen.



Print settings can be changed in this screen before printing. For more information on the print settings, see page 7-16 of the operation manual (for general information and copier operation).

The image printed here can be saved in the quick file folder by touching the [QUICK FILE] key.

6 Touch the [PRINT] key.

Printing begins. When printing finishes, you will return to the screen of step 4.

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E-mail Print

When an e-mail account is set up for the machine, this function is used to have the machine periodically check the mail server and automatically print attachments to e-mails it receives without the need for the printer driver.

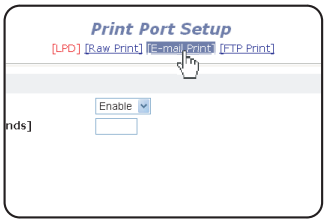
■ Configuring E-mail print settings

To use E-mail Print, the machine's e-mail account information must be configured in the machine. Follow these steps:

1 Click [Print Port] in the link menu of the menu frame.

The "Print Port Setup" page appears.

2 Click [E-mail Print].



3 Enter the E-mail print information.

For detailed information, click the [Help] button in the upper right-hand corner of the window.

4 Click [Submit] and store the entered information.

■ Using E-mail Print

In the "To:" line of your e-mail program, enter the e-mail address of the machine, attach the file that you wish to print, and send the e-mail

Files with the extensions pcl, ps*, pdf*, tiff, and tif can be printed.

*The optional PS3 extension kit is required.

The number of copies and other settings can be specified by entering control commands in the message of the e-mail. The following control commands can be entered:

Function	Command	Values	Example
Number of copies	COPIES	1-999	COPIES=2
Staple	JOBSTAPLE	STAPLENO, STAPLELEFT	JOBSTAPLE=STAPLENO
Two-sided printing	DUPLEX	OFF, TOP, LEFT, RIGHT	DUPLEX=TOP
Account number	ACCOUNTNUMBER	5-digit number	ACCOUNTNUMBER=11111
File type	LANGUAGE	PCL, PCLXL, POSTSCRIPT, PDF, TIFF	LANGUAGE=TIFF
Paper	PAPER	Useable paper type (A4, LETTER, etc.)	PAPER=A4, PAPER=LETTER
Quick File	QUICKFILE	OFF, ON	QUICKFILE=ON

NOTES

- Specify "Text" for the format of the e-mail message. If rich text format (HTML) is used, the entered commands will be disregarded.
- To receive a list of the control commands, send an e-mail with "config" entered in the message.
- If nothing is entered in the message, printing will take place according to the settings in "PRINTER CONDITION SETTINGS" in the "PRINTER DEFAULT SETTINGS" menu of the user settings.
- Encrypted PDF files cannot be printed, with the exception of files encrypted with a null password.
- Only specify a file type when specifying a page description language. Normally a file type does not need to be specified.

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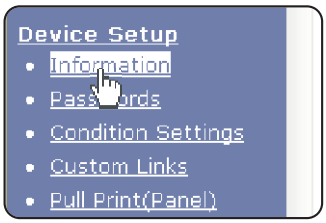
E-mail Status and E-mail Alert settings

These functions send information on machine use (print count, copy count, etc.) and error conditions (paper misfeed, out of paper, out of toner, etc.) via e-mail to the administrator of the machine or the dealer.

■ Information setup

Machine identification information for the status and alert e-mail functions is configured in the "Information Setup" screen. The entered information will be included in status and alert e-mail messages.

1 In the menu frame, click [Information].



The "Information Setup" screen will appear.

2 Enter the machine information.

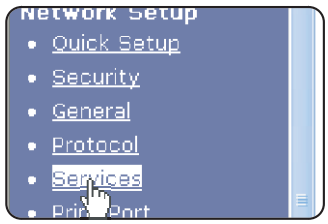
For detailed information, click the [Help] button in the upper right-hand corner of the window.

3 Click [Submit] to store the entered information.

■ SMTP setup

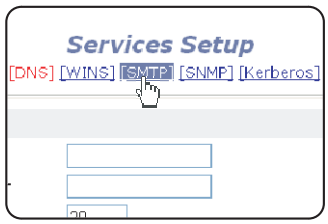
The status and alert e-mail functions use SMTP (Simple Mail Transport Protocol) to send e-mail. The following procedure is used to set up the e-mail environment. This must be done by the system administrator or other person familiar with the network.

1 Click [Services] in the menu frame.



The "Services Setup" screen will appear.

2 Click [SMTP].



3 Enter the information required to set up the e-mail environment.

For detailed information, click the [Help] button in the upper right-hand corner of the window.

4 Click [Submit] to store the entered information.

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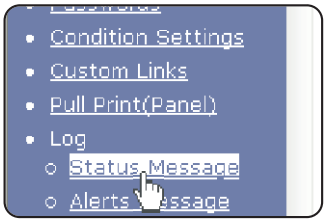
■ Status message setup

Use the status message function to send the current counter information, including the copy count, print count, and total output count, based on the specified schedule. The destinations can be set for administrators and dealers respectively.

To set up the status message, follow these steps.

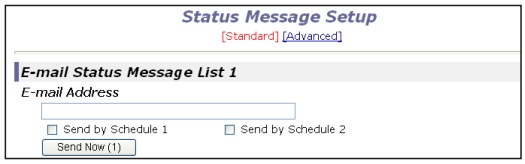
1 Click [Status Message] in the menu frame.



The "Status Message Setup" screen will appear.

2 Enter the required information, including the destination addresses and time schedule.

For detailed information, click the [Help] button in the upper right-hand corner of the window.



3 Click [Submit] to store the entered information.

When the E-mail Status settings are completed, printer count information will be sent periodically by e-mail to the specified e-mail addresses.

NOTE
If you quit the browser before clicking [Submit], the settings will be cancelled. To send printer information immediately to the specified e-mail addresses, click [Send Now].

■ Alerts message setup

Use the alert message function to send alert information, such as empty toner and paper and trouble including paper misfeeds, to specified destinations when such problems occur. The destinations can be set for administrators and dealers respectively.

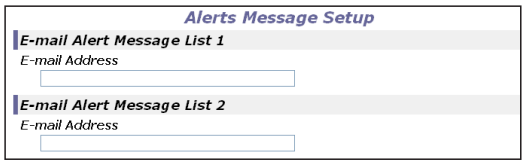
To set up the alert message, follow the procedure below.

1 Click [Alerts Message] in the menu frame.

The "Alerts Message Setup" screen will appear.

2 Enter the destination addresses.

For detailed information, click the [Help] button in the upper right-hand corner of the window.



3 Click [Submit] to store the entered information.

If these parameters are set, event information for the printer will be transmitted to the specified addresses via E-mail each time a specified event occurs. The meaning of each event item is shown below.

Example:

Paper Jam: A paper misfeed has occurred.
Toner Low: Toner is low.
Toner Empty: Toner must be added.
Paper Empty: Paper must be loaded.

NOTE
If you quit the browser before clicking [Submit], the settings will be cancelled.

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CHAPTER 4

PRINTER BASIC SETTINGS

This chapter describes the printer configuration settings.

Page

MAKING CONFIGURATION SETTING 4-2

- Operation procedure common to all printer configuration settings (items that can be set from the operation panel).....4-2
- Printer Default settings.....4-4
- PCL settings.....4-5
- PostScript settings 4-5

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MAKING CONFIGURATION SETTING

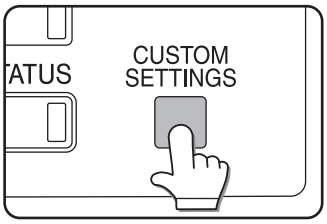
The printer configuration setting allows basic printer settings to be made. The items set with the printer configuration settings are shown below.

- Printer default settings ..... Basic settings used in printing (See page 4-4.)
- PCL settings ..... Sets a PCL symbol set. (See page 4-5.)
- PostScript settings* ..... Sets whether a PostScript error page is printed or not when a PostScript error has occurred. (See page 4-5.)

* An optional PS3 expansion kit is needed.

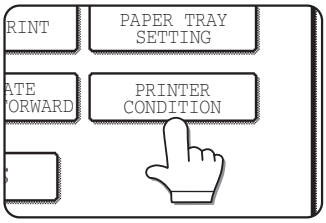
Operation procedure common to all printer configuration settings (items that can be set from the operation panel)

1 Press the [CUSTOM SETTINGS] key.

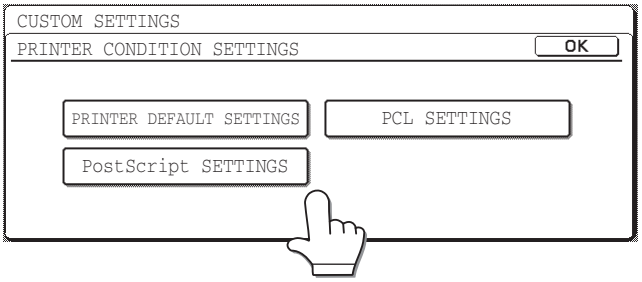


The custom setting menu screen will appear.

2 Touch the [PRINTER CONDITION] key on the custom setting menu screen to display the printer condition setting menu screen.

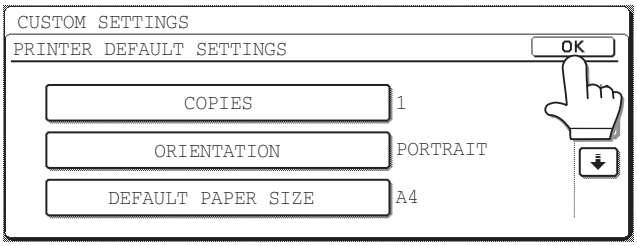


3 Touch the key of the desired item to display its setting screen.



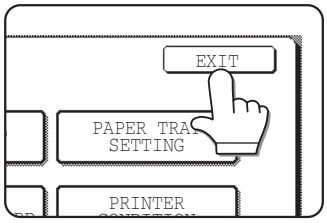
Detailed descriptions for configuration settings start on the page 4-4.

4 Touch the desired setting item on the screen and touch the [OK] key.



To set another item, repeat steps 3 and 4.

5 To finish the setting operation, touch the [EXIT] key.



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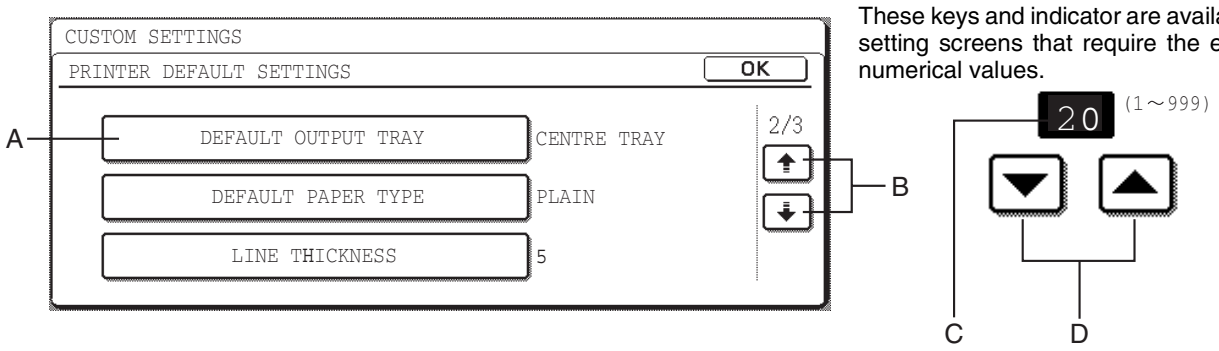
Supplementary explanation of key operation for configuration setting



A The name of the program category or particular item to be set will appear on the touch key. A touch of the key will select the item displayed.

B If the settings continue on the following screen(s), touch the [↑] and [↓] keys to move back and forth through the screens. To return to the category selection screen, touch the [OK] key.

C The currently set numerical value is displayed.

D Numerical values can be set by touching the [▼] and [▲] keys.

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Printer Default settings

The default settings are used to set specific print conditions for printing in an environment where the print driver is not used (such as printing from MS-DOS or from a computer that does not have the provided print driver installed).

NOTE
When the printer driver is used for printing and the printer driver settings conflict with the printer default settings, the printer driver settings take precedence. For items that can be set in the printer driver, perform the settings in the printer driver.

The following settings are available:

■ Copies

COPIES sets the number of print to make.

Default setting: 1

The number of copies can be set from 1 to 999.

■ Orientation

ORIENTATION allows portrait orientation or landscape orientation to be selected for printing.

Default setting: PORTRAIT

PORTRAIT or LANDSCAPE can be set.

■ Default paper size

The paper size to be used for printing under normal conditions is set.
Printing will be performed on the specified size of paper unless otherwise specified.

Default setting: A4 or 8-1/2 x 11

A3, B4, A4, B5, A5, 11X17, 8-1/2X14, 8-1/2X13, 8-1/2X11, 7-1/4X10-1/2 or 5-1/2X8-1/2 can be set.

■ Default output tray

The output tray to be used for printing under normal conditions is set. Printed sheets will be output to the specified tray unless otherwise specified by application software.

Default setting: CENTRE TRAY

The trays that can be selected depend on installation of peripheral devices.

■ Default paper type

The paper type to be used for printing under normal conditions is set. Printing will be performed on the specified type of paper unless otherwise specified.

Default setting: PLAIN

PLAIN, PRE-PRINTED, RECYCLED, LETTER HEAD, PRE-PUNCHED or COLOUR can be set.

■ 2-SIDED PRINT

Printing mode, 1-SIDED or 2-SIDED, to be used for printing in the normal condition is set.

Default setting: 1-SIDED

1-SIDED, 2-SIDED (BOOK) or 2-SIDED (TABLET) can be set.

■ Smoothing

SMOOTHING reduces jaggies seen at roundish curved portions of characters and images to be printed and improves pseudo resolution.

Default setting: Off

Smoothing on or off can be selected.

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■ Line thickness

This setting is used to adjust the line width of vector graphics. For example, if you desire a finer line, select a value from 0 to 4. If you desire a thicker line, select a value from 6 to 9. To return to the standard line thickness, select 5. Use this setting for special applications such as CAD when lines do not appear with sufficient clarity. For regular applications, there is usually no need to change the setting.

Default setting: 5

The relation between the setting values and the change of line thickness are as follows.

Value	0	1	2	3	4	5	6	7	8	9
Thickness change	1dot *1	50%	75%	90%	95%	100%	105%	110%	125%	150%

*1 All lines are 1-dot lines.

PCL settings

■ PCL symbol set setting

This setting is used to select which country's characters are used for certain of the symbols in the character code table of the PCL symbol set. (Use this setting when you need to select symbols that differ by country.)

Default setting: "3" (PC-8)

See page 7-4 for the symbol set settings.
You can also print the "PCL SYMBOL SET LIST" in "LIST PRINT" (see page 2-15 of "Operation manual (for general information and copier operation)") for a table that shows correspondences between numeric values and symbol sets.

■ PCL font setting

This setting is used to select the font for printing.

Default setting: "0" (Courier) (resident font)

If the optional extended font kit is installed, you can also select from these fonts. In addition, the "PCL INTERNAL FONT LIST" in "PRINTER TEST PAGE" of "LIST PRINT" (see page 2-13 of "Operation manual (for general information and copier operation)") can be printed.

When the optional extended font kit is installed, the "PCL EXTENDED FONT LIST" can be printed.

■ PCL LINE FEED CODE

This setting is used to select how the printer responds when a line break command is received.

Default setting: 0.CR=CR; LF=LF; FF=FF

■ WIDE A4

When this setting is enabled, up to 80 characters can be printed on one line of A4 size paper using 10 CPI font (8 bit characters). When disabled, up to 78 characters can be printed.
Default setting: Disabled

PostScript settings

This setting specifies whether an error page describing the cause of an error is printed or not when a PostScript error has occurred.
Selections are available to choose printing or not printing of error pages.

Default setting: Not print

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CHAPTER 5

KEY OPERATOR PROGRAMS

This chapter explains the key operator programs for the printer function. Key operators should read this chapter to ensure correct use of the key operator programs.

Page

KEY OPERATOR PROGRAMS....5-2
- Key operator program list....5-2
- Procedure for using key operator programs....5-3
- Key operator program menu....5-4

DESCRIPTION OF SETTING PROGRAMS....5-5
- Printer settings....5-5
- Network settings....5-7

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KEY OPERATOR PROGRAMS

Key operator programs related to the printer function are explained here. For key operator programs for general use of the machine, see the key operator's guide.

NOTE
The key operator programs that can be accessed depend upon how the product is configured with optional equipment.

Key operator program list

Program name	Page
Printer settings	
Default settings	
Prohibit notice page printing	5-5
Print density level	5-5
Prohibit test page printing	5-5
A4/letter size auto change	5-5
Interface settings	
Hexadecimal dump mode	5-5
I/O timeout	5-5
Enable parallel port	5-6
Parallel port emulation switching	5-6
Enable USB port	5-6
USB port emulation switching	5-6
Enable network port	5-6
Network port emulation switching	5-6
Port switching method	5-6
Parallel port ECP setting	5-6
Network settings	
IP address setting	5-7
Enable TCP/IP	5-7
Enable NetWare	5-7
Enable EtherTalk	5-7
Enable NetBEUI	5-7
Reset the NIC	5-7
Tandem setting	5-7
PING command	5-7

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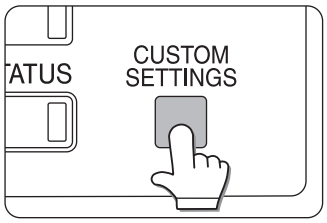
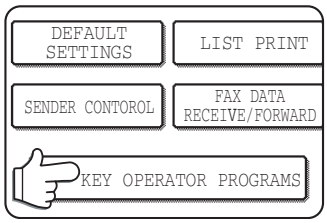
Procedure for using key operator programs

The procedure for configuring a key operator program is explained below.

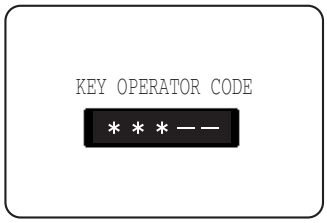
1 Press the [CUSTOM SETTINGS] key.



2 Touch the [KEY OPERATOR PROGRAMS] key.

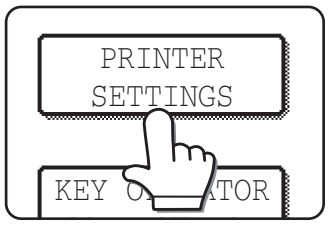


3 Use the numeric keys to enter the five-digit key operator code number.



The factory default setting for the key operator code is indicated on page 2 of the key operator's guide.

4 Touch the [PRINTER SETTINGS] key.



Follow these steps to select the program that you wish to use.

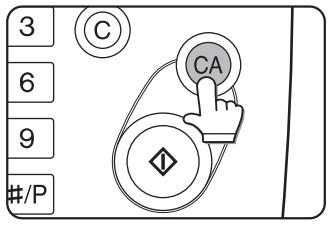
In the following steps, the setting screens for the selected program will appear. Refer to the program explanations on page 5-5 and following, and then follow these steps to select a setting for the program.

5 Make desired settings for the selected program.

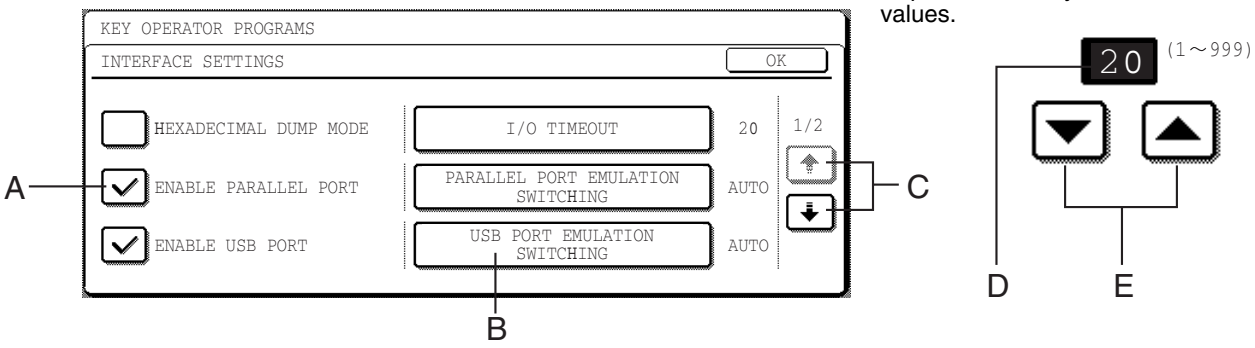
Select the desired program from the programs shown on page 5-2.

Detailed descriptions for program settings start on the next page.

6 Press the [CA] key to exit the program.



Supplementary explanation of key operation for key operator programs



These keys and indicator are available on setting screens that require the entry of numerical values.

A Check mark boxes are touch keys that show the status of selections. A box with a check mark means the function is "on" (enabled) and an unchecked box means the function is "off" (disabled). Alternate touches of a box will change the on/off status.

B The name of the program category or particular item to be set will appear on the touch key. A touch of the key will select the item displayed.

C If the settings continue on the following screen (s), touch the [↑] and [↓] keys to move back and forth through the screens. To return to the category selection screen, touch the [OK] key.

D The currently set numerical value is displayed.

E Numerical values can be set by touching the [▼] and [▲] keys.

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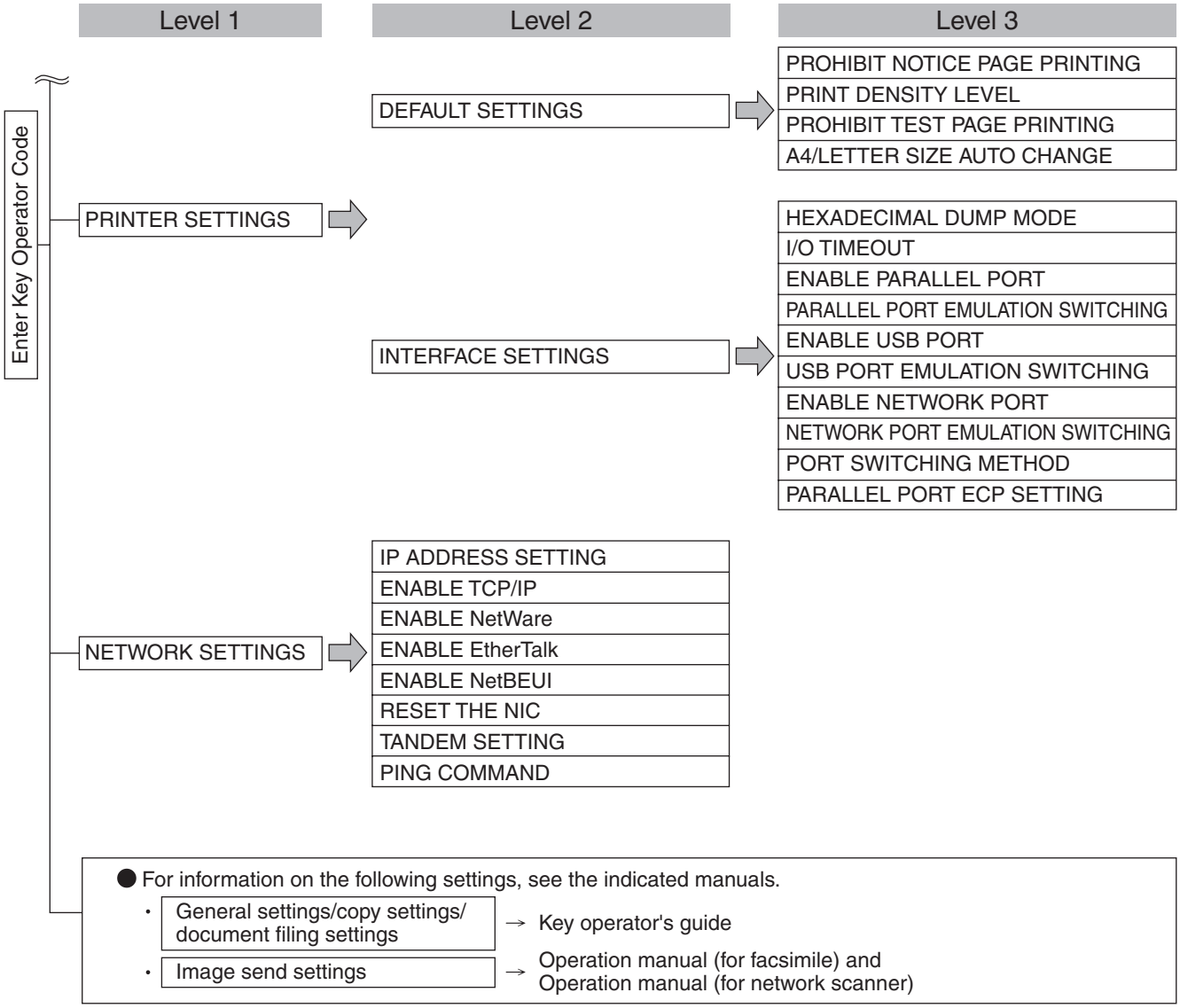
Key operator program menu

The key operator programs are accessed via the following menu structure.
Refer to this menu when changing the settings explained on the following pages.



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DESCRIPTION OF SETTING PROGRAMS

The key operator programs related to the printer function are explained here.

Printer settings

Default settings

These programs are used to adjust the settings of various printer functions.

Prohibit notice page printing

This program is used to disable notice page printing.
Turn on this program when you do not want the machine to print the notice page explained in "NOTICE PAGE PRINTING" on page 7-3.
Normally this program is set to not print a notice page.

Print density level

This program is used to adjust the lightness or darkness of prints.
Five levels are provided for density adjustment. These are represented by numbers displayed on the touch panel. Among the displayed numbers, a smaller value indicates lighter density and a larger value indicates a darker density.

Prohibit test page printing

This program is used to disable test page printing.
When the program is turned on, the PRINTER TEST PAGE in the custom settings cannot be printed. (See page 2-15 of "Operation manual (for general information and copier operation)")

A4/letter size auto change

If this program is set, and printing onto 8-1/2" x 11" size paper is selected but not available, the printer will automatically substitute A4 size paper in place of 8-1/2" x 11" paper if A4 paper is available.

* 8-1/2" x 11" paper cannot be automatically selected in place of A4.

NOTE
When 8-1/2" x 11" size is specified for a document attached to an E-mail that has been transmitted from a foreign country and A4 size paper is not installed in the printer, printing cannot be done without operator intervention. If this program is set, printing will be executed without intervention if a paper tray is loaded with A4 paper.

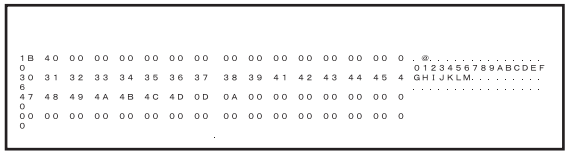
Interface settings

These programs are used to control data transmitted to the parallel port, USB port or network port of this printer.

Hexadecimal dump mode

This program is used to output the print data from a computer in the hexadecimal dump format with corresponding characters (ASCII). This program is used to check proper transmission of print data from the computer to the printer.

Output example of hexadecimal dump mode



I/O timeout

This program is used to set the length of time to wait for an I/O to complete a job on the parallel port or the network port. If the data stream to the port does not transmit data for a length of time exceeding the timeout, the job will cancel and the next job will start processing.
The I/O timeout setting is used to set the amount of time after which an I/O timeout will occur when waiting for print data.
Default setting: 20 seconds

NOTE
The allowable range of the time is 1 to 999 seconds.

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Enable parallel port

This program is used to enable or disable printing from the parallel port.
Default setting: Enable

Parallel port emulation switching

This program is used to specify a printer language to emulate when the printer is connected to a computer through the parallel port.

Setting items	Description
Auto	The printer language will switch automatically in accordance with the data from the computer.
PostScript	PostScript emulation is used to print the data from the computer. (An optional PS3 expansion kit is needed.)
PCL	PCL emulation is used to print the data from the computer.

NOTE
It is recommended to set "AUTO" (default setting) unless an error due to this setting occurs frequently.

Enable USB port

This program is used to enable or disable printing from the USB port.
Default setting: Enable

USB port emulation switching

If the machine is connected using the USB port, select the emulated printer language.
The setting items are the same as those of "Parallel port emulation switching".

NOTE
It is recommended to set "AUTO" (default setting) unless an error due to this setting occurs frequently.

Enable network port

This program is used to enable or disable printing from the network port.
Default setting: Enable

Network port emulation switching

This program is used to specify a printer language to emulate when the printer is connected to a computer through the network port.
The setting items are the same as those of "Parallel port emulation switching".

NOTE
It is recommended to set "AUTO" (default setting) unless an error due to this setting occurs frequently.

Port switching method

The machine can use the three ports shown below for printing. This program is used to select when switching between ports will take place. "SWITCH AT END OF JOB" or "SWITCH AFTER I/O TIMEOUT" can be selected. When "SWITCH AT END OF JOB" is selected, the port will be automatically selected after each print job is completed. When "SWITCH AFTER I/O TIMEOUT" is selected, the port will be automatically selected if the time set in the I/O Timeout program elapses.

- Parallel port
- USB port
- Network port

Parallel port ECP setting

This is used to enable bi-directional communication through the Centronix interface.
Select "Parallel port ECP setting" to enable data transmission both from the computer to the printer and from the printer to the computer.
Normally ECP mode is not selected.

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Network settings

These programs are set when this product is used as a network printer.
After you complete the setting for one program, you must exit the key operator programs, turn off the main switch, wait briefly, and then turn on the main switch again before any other programs can be set. The program that was set will be effective after the power is turned on.

NOTE
For setting and modification of "Network settings", be sure to consult with the network administrator.

IP address setting

When using this product in a network that uses the TCP/IP protocol, use this program to set the IP address (IP address, IP subnet mask, and IP gateway) of this product. The program is set to ENABLE DHCP by factory default setting, which obtains the IP address setting automatically. When using this product on a TCP/IP network, be sure to turn on the "Enable TCP/IP" program below.

If DHCP is used, the IP address assigned to the machine may be changed automatically on occasion. If this happens, printing will not be possible.

Enable TCP/IP

When using this product in a network that uses the TCP/IP protocol, set this program. Also set the IP address using the program "IP address setting" above.
Default setting: Enable

Enable NetWare

When using this product in a network that uses the NetWare protocol, set this program.
Default setting: Enable

Enable EtherTalk

When using this product in a network that uses the EtherTalk protocol, set this program.
Default setting: Enable

Enable NetBEUI

When using this product in a network that uses the NetBEUI protocol, set this program.
Default setting: Enable

Reset the NIC

This program is used to reset all setting items of NIC (Network Interface Card) of this product to the factory default settings.

NOTE
If any of the [NETWORK SETTINGS] were changed prior to execution of this program, you must turn off the power switch after exiting the key operator program, wait briefly, and then turn on the power switch to make the factory default settings take effect.

Tandem setting

This setting is used to configure the IP address and port number of the client printer when you wish to have two machines (which are used as TCP/IP network printers) print in tandem.
Tandem printing is not possible if the other machine is a different model than your machine.
The factory default setting for the port number is [50001]. Unless you experience difficulty with this setting, it does not need to be changed.
The tandem function can also be prohibited, or the reception of tandem data from the other machine can be prohibited. (Normally this is not necessary.)
To prohibit the tandem function, select "DISABLING OF MASTER MACHINE MODE".
To prohibit reception of tandem data from the other machine, select "DISABLING OF SLAVE MACHINE MODE".

NOTE
To use the tandem function when auditing mode is enabled, the same account number must be entered on both machines. If the same account number is not entered, only the server machine may print or the printed pages may not be added to the correct account.

PING command

This program is used to check if the machine and a computer connected to the network can communicate. Enter the IP address of the computer that you wish to check and touch the [START] key. A message will appear indicating whether or not there was a response from the computer.

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CHAPTER 6

TROUBLESHOOTING

This chapter provides solutions to problems you may encounter when using the machine. Be sure to read this chapter whenever you encounter a problem.

Page

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- Checking the IP address 6-4

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TROUBLESHOOTING

The following problems may not be due to a machine failure, so please check again before calling for service. In the event that service is required, turn off the machine main power switch and power switch, unplug the power plug from the outlet. Problems related to the printer function are described in this chapter. For troubleshooting related to general machine use, the copier function, document filing function or the network scanner function, please read "Troubleshooting" in the corresponding manuals.

Problem	Check	Solution or cause
Printer is on but data is not received.	Is the interface cable correctly connected?	Make sure the USB or parallel cable is correctly connected to the machine and your computer. For more information, consult your network administrator.
	Has the printer driver been installed correctly?	Install the appropriate printer driver. (See the "SOFTWARE SETUP GUIDE (for printer)".)
	Is the printer driver correctly selected? / Has it been configured in the network (when using as a network printer)?	Make sure that this printer is selected in the software application software or use an appropriate utility to check that the printer is registered on the network. For more information, consult your network administrator.
Data is received but not printed.	Has the specified size and type of paper been loaded?	Load paper, select another paper size or cancel printing.
Printer cannot be selected from computer.	Has the printer driver been installed correctly?	Install the appropriate printer driver. (See the "SOFTWARE SETUP GUIDE (for printer)".)
The orientation of the image is incorrect on the print.	Are the print orientation settings in the printer driver correct?	Correct the orientation in the printer driver.
The printed image is cut off.	An incorrect ratio has been selected.	Select a suitable ratio when printing.
The edges of the printed image are missing.	There are margins around the edges of the paper where printing is not possible. Does the image overlap those margins?	Change the print area.
Printer prints in reverse order.	Has reverse page order been selected in the software application?	Cancel the reverse order printing in the application software.
Printer stops in the middle of a print job.	Has the tray full sensor activated and stopped printing because too many pages are in the exit tray?	Remove the paper from the exit tray.
	Is the tray out of paper?	Load paper. (see page 2-2 of "Operation manual (for general information and copier operation)")
Printing is not on desired paper size.	Has paper selection been set to Automatic in the printer driver?	Ensure that the desired paper is set in a paper tray of the printer and select "Auto Select" in the paper selection of the printer driver.
Printer write error occurs when printing from the parallel port.	Is the timeout setting for the printer driver too short?	Set a longer time in the timeout setting in the printer driver.
Password entry is requested.	Did you enter a password for the retention function?	Password is needed when executing printing. If the password is not known, printing cannot be executed.

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Problem	Check	Solution or cause
The printer driver cannot be installed.	Is there sufficient free space on your hard drive?	Delete any unneeded files and applications to increase free space on your hard drive.
	Are you using an operating system that is not supported?	Make sure your operating system is supported. (See the SOFTWARE SETUP GUIDE (for printer) that accompanied the machine.)
Two-sided printing is not possible.	Is [2-Sided (Book)] or [2-Sided (Tablet)] selected in the "Main" tab of the printer driver?	Select [2-Sided (Book)] or [2-Sided (Tablet)] (page 2-2).
	Has two-sided printing been prohibited in the key operator programs?	"Disabling of Duplex" has been enabled in the key operator programs. Consult the key operator.
Not all of the image is printed.	Are multiple applications running at once?	Quit all applications that you are not using and try printing again.
Stapling does not take place.	Has use of the staple been prohibited in the key operator programs?	"Disabling of Stapler" has been enabled in the key operator programs. Consult the key operator. The inserter does not operate (when an inserter is installed).
	Did you attempt to staple more than the maximum number of pages?	Check the maximum number of pages that can be stapled (page 2-4).
The mail-bin stacker cannot be used.	Has the mail-bin stacker been disabled in the key operator programs?	"DISABLING OF MAIL-BIN STACKER" has been enabled in the key operator programs. Consult your key operator and take action accordingly.
Punching does not take place (when a punch module is installed).	Is the "Punch" checkbox selected in the "Main" tab of the printer driver?	Select the "Punch" checkbox. (page 2-5)
	Has use of the punch module been prohibited in the key operator programs?	"Disabling of punch" has been enabled in the key operator programs. Consult the key operator.
Document filing is not possible.	Has the printer driver been set to use the document filing function?	Select the "Document Filing" checkbox in the "Job Handling" tab of the printer driver. (page 2-12)
	Do user folders created in the machine appear in "Folder Information"?	Click the "Get Folder Name" button in the document filing screen to call up the folders created in the machine. (page 2-12)
	Does the user folder have a password?	Enter the password in "Folder Pass Code" in the document filing screen. (page 2-12)

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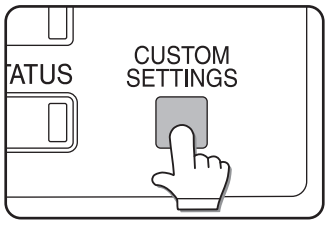
Checking the IP address

There are three ways to check the IP address:

1. **Using [LIST PRINT] in [CUSTOM SETTINGS] in the operation panel**
   Select NIC PAGE to print a list of the machine settings. The IP address that has been set for the machine can be found in this list. Follow the procedure below to check the IP address using NIC PAGE.
2. **Using the key operator programs**
   The IP address can be verified using the key operator programs. To use this procedure, consult your key operator.
3. **Using the NIC Manager utility in the Software CD-ROM (2)**
   The NIC Manager utility in the Software CD-ROM (2) can be used to check the IP address. For details, see the online manual (Print Server Card Users Manual) in the Software CD-ROM (2).

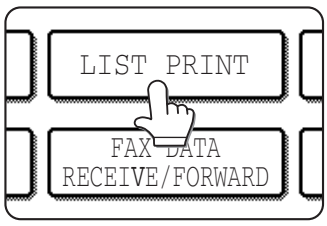
Checking the IP address from the [CUSTOM SETTINGS] screen of the operation panel

1 Press the [CUSTOM SETTINGS] key.

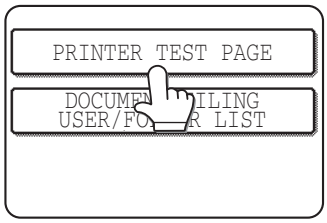


The custom setting menu screen will appear.

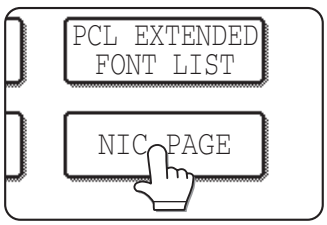
2 Touch the [LIST PRINT] key.



3 Touch the [PRINTER TEST PAGE] key.



4 Touch the [NIC PAGE] key.



PROCESSING PRINT DATA appears in the message screen and printing begins. To cancel printing, touch the [CANCEL] key.

NOTE
There are a variety of different types of network environments. When using the machine in a network environment, refer to the detailed explanations in the online manual (Print Server Card Users Manual) in the Software CD-ROM (2).

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CHAPTER 7

APPENDIX

This chapter contains product specifications and other technical information.

Page

PRINTER SPECIFICATIONS 7-2
NOTICE PAGE PRINTING 7-3
PRINT AREA 7-4

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PRINTER SPECIFICATIONS

Memory capacity (standard)	Standard 128MB
DIMM slots for additional memory	One (64 MB to 256 MB memory can be mounted.)
Page description language	PCL6, PCL5e, PS3 emulation*
Resident font	For PCL: Outline fonts: 80 Barcode fonts (option): 28 Bitmap font: 1 PostScript compatible fonts (option): 136
Interface	IEEE-1284 compatible parallel interface (P1284B connector) USB1.1 (Windows98/ME/2000/XP/Server 2003) USB2.0 (Windows2000/XP/Server 2003)
LAN connection	10Base-T/100Base-TX Supported protocols: IPX/SPX, TCP/IP, EtherTalk, NetBEUI For detailed network specifications, see the manual for the print server card. (The manual is provided in PDF format in the Software CD-ROM (2).)
Operating system	IBM PC/AT or compatible computer: Windows® 95/98/Me, Windows NT® 4.0 (ServicePack5 or later), Windows® 2000 Server/Professional, Windows® XP Professional/Home Edition, Windows® Server 2003 Macintosh series*: Mac OS 8.6 to 9.2.2, 10.1.5, and 10.2 to 10.2.8 (except 10.2.2), 10.3 to 10.3.3
Continuous print speed	AR-M351N: 35 pages/min, AR-M451N: 45 pages/min (Print speed during printing of the second sheet and following sheets when using A4 (8-1/2" x 11") plain paper and performing continuous one-sided printing of the same page; excluding use of offset output.)
Resolution	Data processing: 600 x 600 dpi Printing: 600 x 600 dpi, 1200 dpi equivalent x 600 dpi

* An optional PS3 expansion kit is needed.

Some discrepancies may exist in the illustrations and content due to improvements to the machine.

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NOTICE PAGE PRINTING

A notice page will be printed when the current print job cannot be run due to a system limitation and an explanation of the limitation is too lengthy to be shown in the message display. A notice page will describe the limitation and other possible ways instead of possibilities to run the job.
Printing of the notice page is initially disabled in the key operator programs (see "PROHIBIT NOTICE PAGE PRINTING" on page 5-5).
A notice page will be printed in the following cases.

- When the print data of a single job is so large that it cannot be held in memory. (When there are other jobs occupying memory, notice pages may tend to be printed more frequently even for jobs with small amounts of data.)
- When different paper sizes have been selected for printing within a print job and one or more of the sizes cannot be delivered to the selected exit tray or to the stapler compiler. In these cases printed paper will be delivered partly to the specified destination (tray or compiler) and partly to another exit tray.
- When a function is selected that has been disabled using the key operator programs, such as disabling of two-sided printing, disabling of the staple function, or disabling of a specified exit tray.
- An invalid account number is entered when the auditing mode has been set.

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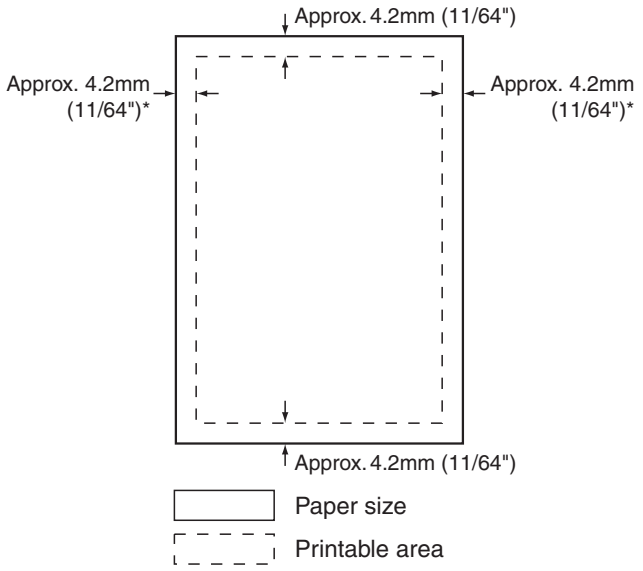
PRINT AREA

The print area of this product is shown below.



●The print area is the entire page excluding a margin of 4.2 mm (11/64") at each edge. The actual print area may vary depending on the printer driver used and the type of software application.

PCL symbol set

No.	symbol set
1	Roman-8
2	ISO 8859-1 Latin 1
3	PC-8
4	PC-8 Danish/Norwegian
5	PC-850
6	ISO 6 ASCII
7	Legal
8	ISO 21 German
9	ISO 17 Spanish
10	ISO 69 French
11	ISO 15 Italian
12	ISO 60 Norwegian v1
13	ISO 4 United Kingdom
14	ISO 11 Swedish : names
15	PC1004 (OS/2)
16	DeskTop
17	PS Text
18	Microsoft Publishing
19	Math-8
20	PS Math

No.	symbol set
21	Pi Font
22	ISO 8859-2 Latin 2
23	ISO 8859-9 Latin 5
24	ISO 8859-10 Latin 6
25	PC-852
26	PC-775
27	PC Turkish
28	MC Text
29	Windows 3.1 Latin 1
30	Windows 3.1 Latin 2
31	Windows 3.1 Latin 5
32	Windows Baltic (not 3.1)
33	Windows 3.0 Latin 1
34	Symbol
35	Wingdings

●These symbol sets are trademarks or registered trademarks of their respective owners.

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OPERATION MANUAL (for printer)

SHARP®

ARM451N-EX-PRINTER

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